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must be sunk within three inches of the bottom. The winter-fishing for Dace requires very different baits; namely, those white, red-headed maggots, usually found in great numbers in ploughed lands, and which, if deposited among fresh earth, may be preserved many months for that purpose.

Dace are extremely vivacious; and, when immersed in water, will live a considerable time, provided that element is frequently changed. They are said to subsist on the animalcula found in the water; and, in time, to become extremely tame.

DACOLYTHUS. An appellation given by many authors to a small fish, a species of the loach, distinguished by Ray under the name of *cobitis barbatula aculeata*. It seldom exceeds two, or at most three, inches in length; the head is broader and flatter than the rest of the body; the back is of a dusky brown colour, spotted with black; and the belly is yellow. There are two beards on each side of the upper-jaw; and on the coverings of the gills, on both sides, there are two prickles, or a double-pointed sharp hook, by means of which the *Dacolythus* moves about among the stones. This fish, which is very partial to shallow waters with stony bottoms, spawns in May and June.

There is another species of this fish, distinguished from the preceding by having ten beards at its mouth: and a notion prevails among the vulgar, that it swallows little stones; hence its German appellation signifies Stone-swallower, or Stone-biter.

DACTYL. A name frequently given to the solen, or razor-fish, supposed to be the *Dactylus* of Pliny, and to which that naturalist ascribes a luminous quality in the dark. Reaumur, however, asserts, that the common soal or razor-fish possesses no such quality; but that the pholas, or, as the French call it, the dail, certainly does; and therefore concludes, that the pholas is either the *Dactylus* of Pliny, or that this author has attributed to one species of fish what is the peculiar property of another.

The shell of the *Dactyl*, or pholas, is by no means luminous, but only its body and juices; and in this respect it bears no affinity to some kinds of fish which are known to possess the quality of shining in the dark, since these never exhibit a luminous appearance till they are in a state of decay, and partly putrid; whereas these retain their resplendent quality at all times. The glow-worm is only partially luminous; but the pholas is entirely so; and, when divested of its shell, and deposited in any dark place, every part of its surface emits a very lively light. Nor is that light peculiar to the external surface of this fish, but common to the whole body; for, when wounded either transversely or longitudinally, the mangled parts appear equally luminous with the other surfaces. The *Dactyl* is therefore a genuine, natural phosphorus; and, like the artificial one of urine, renders every object luminous by friction.

Reaumur has remarked of this fish, that, when fresh caught, it abounds with water, which naturally drops away on being handled; and, according to Pliny's just observation, these very drops are luminous. However, the light which the *Dactyl* communicates to bodies coming in contact with it, is not permanent, but continues only while they are wet. Reaumur observed that the light on his fingers grew fainter and fainter by degrees as they dried; and that, on dipping them in water, it brightened up again. By this circumstance, he was encouraged to attempt some mode of pre-

D A N

serving this fish, so as to make it an occasional phosphorus, but the experiment did not coincide with his wishes.

In the summer months *Dactyls* may be kept fresh for several days, during which they will retain their luminous quality; but, as they begin to decay, they gradually lose their lustre: and it also appears that, if dead ones are intermixed with living, the latter will lose their luminous quality even in their best state.

It is well known that all the species of the pholæ live in holes in stones and other substances, where they have no egress; and Reaumur having caused some of these stones to be taken up, (in which, on breaking them, there appeared some dead fish, and some living ones) discovered, that the living animals contained in them did not possess their luminous property, but that it seemed to be extinguished by having been in contact with such of the pholæ as were dead and putrid.

DAGYSA. A marine animal found within twenty leagues of the coast of Spain, and first noticed by Sir Joseph Banks and Dr. Solander, who gave the name of *Dagysa* to this new genus of marine animals because of the resemblance which one species of them bore to a gem. This creature, which was of an angular figure, about three inches long and one thick, had a perforation quite through it, and a brown spot at one extremity, which these gentlemen conjectured to be the stomach. Four of these animals, when first taken, adhered together by their sides, and appeared to be only one; but, on being put into a glass of water, they soon separated, and swam about. Several specimens of them were afterwards caught sticking together, sometimes to the length of a yard or more; and, when in the water, exhibiting very beautiful colours.

DAKER HEN. The English name for the *ortygometra*, a bird of the gallinaceous kind somewhat resembling the quail. It weighs about four ounces and a half; its length, from the tip of the bill to the end of the claws, is fifteen inches, and to the end of the tail eleven inches and a half; the expansion of the wings is nine inches; the body is narrow, or compressed sideways like that of the water-hen; the breast and belly are white; on the head there are two broad black lines; and there is likewise a white one which runs from the scapulars, as in the moor-hen. The back is black, with an admixture of reddish ash-colour; and the lesser coverts of the wings, as well as the borders of the prime-feathers, are of a deep yellow. The tail is two inches long; the bill is of a moderate size; and the legs and feet, which are long, are between a fawn and a green colour.

The *Daker Hen* resembles the quail in many respects, and is said to associate with one species of quails. During the spring, it frequents open fields, and puts forth a croaking call very peculiar to itself, which fowlers sometimes imitate with success. It is very common in Ireland and Scotland; and is sometimes seen in the northern counties of England, where it is known under various appellations.

DAMIER. A name given by French naturalists to that elegant species of voluta, the top of which are placed in a chequered order, resembling the mark of a draught or chess board.

DANCER. An appellation sometimes given to a species of the dog.

DANGUANGHAC. The Philippine name

DAW

for the ardea, or heron. The Spaniards call it gazza; and it appears to be the same species with the common heron.

DANISH DOG. An animal which, as to it's shape, seems to be a compound of the mastiff and the grey-hound, being more slender than the one, and much stronger than the other. It is the tallest dog generally bred in England, but is more shewy than serviceable. See Dog.

DARE. A provincial name for the dace.

DART, ACONTIAS. An animal of the serpent kind, so called from it's shooting itself forward like a dart. It is of a whitish ash-colour; the belly is entirely white; and on the back there appears a number of black spots. The neck is black, and from thence run two white lines along the back to the tail; and the black spots, which are small, are all encircled with rings of white. Travellers affirm, that serpents of this kind lodge in trees, from whence they suddenly dart on such persons as casually pass within their reach; and that their bites prove mortal. They are found in Egypt, Lybia, and the Mediterranean islands. See ACONTIAS.

DART OF AMBOYNA. This reptile, which is about six feet long, and as thick as a man's arm, is covered with scales of a reddish brown colour, except on the back and sides, where they have an azure hue. The head is of a moderate size; the eyes are large and bright; the teeth are small; and the tail is long and pointed.

DASYPUS. The Dasypus forms a genus of brutes of the class of mammalia, in the Linnæan system. This genus has many grinding, but no cutting or canine teeth. The several varieties are distinguished by the number of bands encompassing them, and which reach from the back to the edges of the belly. Accordingly, Linnæus enumerates the single-banded, the three-banded, the four, six, seven, and nine-banded Dasypus. See ARMADILLO, and TATU.

DAUPHIN. A species of shell-fish of the cochlææ lunares genus, or round-mouthed snails; ornamented with rows of indented eminences on all the revolutions of the shell.

DAW, JACK, or COMMON DAW. This bird is less than the crow. From the hind-part of the head to the middle of the neck, it is of an ash-colour; the breast and belly are somewhat of the same hue; but the rest of the body is black, with a blueish gloss. The head is pretty large; which circumstance, according to Willughby, indicates this bird to be ingenious and crafty. The irides are white; the forehead, the bill, and the feet, are black; and the claws are very strong and hooked. The bill is an inch and a quarter in length; and the tongue is cloven at the end. It weighs nine ounces and a half; from the tip of the bill to the extremity of the tail, it measures thirteen inches and a half; and the expansion of the wings is twenty-eight inches. The female lays five or six eggs, which are less pale and spotted than those of the crow. It breeds in many European countries; and delights to lodge about old towers, castles, church-trees, and stone walls, especially such as are dilapidated or ruinous. In some parts of Hampshire, it makes it's nest in rabbit-holes; but it very seldom inhabits trees.

The Jack-Daw is very docile and loquacious; it is a gregarious fowl; it feeds on nuts, fruits, grain, and insects; but it's flesh is not deemed proper food.

Daw, PURPLE. According to Catesby, this

DAY

bird is of a purple colour; the bill is black; the tail is longer than that of the common Jack-Daw; and the middle feather considerably longer than the rest. The purple hue of this fowl is so very deep that, at a distance, it appears as if entirely black; but the hen is of a brown colour.

DAW, BLACK AND YELLOW, OF BRAZIL. This bird is about the size of the common Daw. The bill, which is yellow, is a little incurvated at the point, pretty sharp, and smooth on the surface; the plumage is black, with a slight gloss of purple, except a spot of bright yellow on the covert-feathers of each wing; and the lower half of the back, the covert-feathers both above and beneath the tail, and the bottoms of the tail-feathers, are also of a fine golden yellow. The wings are internally black; and both the black and yellow parts of this bird have their downy feathers at the bottoms very white. The tail consists of twelve feathers; the legs and claws are strong, and covered with black scales; and the exterior and middle toes adhere a little at their bottoms. According to Marcgrave, the eyes of this fowl are of a sapphire colour.

DAW, BLUE AND GREEN. This beautiful bird is said to be a native of the isle of Ceylon. The bill, which is black, is a little arched, and has an angle on each side of the upper mandible near the point; the whole head, the neck, the under-side to the tail, the lower part of the back, and the tail, are entirely of a most delightful blue, shaded with a cast of purple, and having a bright shining surface like polished metal; the lesser coverts of the wings, both above and below, are of the same shining blue colour; the middle of the back, the quills, and the two rows of coverts above them, are a most splendid green reflecting glosses like burnished gold; the covert-feathers have black tips, forming two rows across each wing; the insides of the quills, and the under-side of the tail, are a dusky black; the tips of the tail-feathers, and the middle of the belly between the legs, have the blue feathers tinged with green; the legs, feet, and claws, are pretty strong in proportion, and covered with black scales; and the exterior toes adhere a little, at their bottoms, to the middle ones. This species was first described by Edwards.

DAW, SURINAM. This bird is about the size of the common crow; the top of the head is of a deep green colour; the hind-part is marked with a fine blue, and beneath that with pale green. Under each ear, and on the hind-part of the neck, there are spots of a greenish colour; the neck, breast, belly, back, and coverts of the wings, are a varying green; the primaries are dusky, terminating in blue; the tail is blackish; and the legs are of a flesh-colour.

DAY-FLY. An inoffensive race of insects, which pass their very limited state of being as the prey of numerous enemies, whose injuries nature has not fitted them either to retort or avoid. They live near those waters in which they breed; and, in their winged state, enjoy such a short existence, as to have afforded scope for the reflections of the naturalist, and emblems for the moralist.

The term Day Fly originates from these insects living in that state only one day, but, with respect to many of the species, even that period is circumscribed.

That particular class which some naturalists describe under the name of phryganea, never bursts from it's reptile state till about six in a summer's evening,

DAY

evening; and, before the sun rises next morning, it is no more. Five hours generally compleat it's contracted span of life; during which, if it is fortunate enough to escape the fishes, the dragon-flies, and the reed-sparrows, it deposits it's impregnated eggs in the waters, and dies before the midnight cold. The worm, however, which is hatched from the egg of this fly, lives and feeds at ease in the waters, enjoying a much longer existence, and that in more security; for it covers it's tender frame with a motley case of it's own constructing; and lives, unsuspected and unseen, for one, and sometimes nearly two years.

The Day-Fly has an oblong mouth; it is destitute both of teeth and feelers; there are two large studs on the head, exactly above the eyes; the wings, which are carried standing upwards, are unequal in size; and the tail has bristles projecting from it.

DAY-FLY, WHITE-WINGED. Insects of this species fly with great velocity: they abound near running waters during the months of June and July, supplying multitudes of fishes with food, which eagerly watch them while depositing their eggs; and no sooner do they propagate their kind, than they pay their ransom with their lives. The antlers of the Day-Fly have a multitude of knotted joints, which grow smaller towards their points; the bristles of the tail are hard and firm; the head is of a dusky brown colour; the eyes are green; the studs above the eyes are a jetty black and lucid; the mouth forms a kind of amber-coloured beak; the trunk is a tawny brown, with a brighter spot in the centre; the body is a dull brown with pale rings; the legs are a greyish or ash-colour; the tail is a pale brown; and the bristles are ruddy.

DAY-FLY, ROCK. For the history of this fly, which is particularly curious, we are indebted to the late ingenious Dr. Hill, who informs us, that he became acquainted with this little insect in the following very singular manner. Having observed several oblong, greyish tubes or cases, running in various directions on a stone obelisk erected before a certain house in London, he was inclined to suppose that they were tubuli, or cases of sea-worms, petrified; but finding that this obelisk carried evident marks of the chissel, and that the little tubules were wrought over them, he directed some to be picked off, but found them as hard as the rest of the stone, and affixed to it with great solidity. However, by the assistance of a hammer, a few of them were disengaged; but they exhibited nothing shelly in them, being mere stony tubes, formed of the substance of the obelisk in small granules cemented close.

Thus, as the Doctor informs us, the matter rested for some time; but his curiosity being awakened by the singularity of the incident, he examined large masses of stone wherever they presented themselves; and, happening to pass into Buckinghamshire in the month of July, he there found means to unravel the whole mystery.

Several large stones, partly immersed in water, were, in those parts of them which remained dry, covered with grey stony tubules, of the same kind as he had formerly observed on the obelisk; and, in the space of one evening, he discovered more than fifty flies about one mass, which evidently owed their origin to the worms enclosed in the tubules. These flies are very beautiful creatures, and somewhat resemble the phryganea in the shortness of their duration, as well as in various other

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particulars. The Doctor observed the females busied in depositing their eggs in all the visible cracks and crevices of the stones, where the worms form tubules for themselves, and probably live in that state for one, or even two years.

The head of this fly is hoary, and of a fine green colour, with a black round spot on it's centre shining at the top; the eyes are a deep black; the studs are brown; the antlers are long, projecting straight forwards, and usually crossed; the mouth is dusky; the trunk, which is a lively green, is united to the body by a kind of neck of a glossy green; the back is beautifully variegated with streaks and dots of gold; and the scutcheon is of a lighter green. The body is thick, and green; the legs are a pale brown; the wings are a pearly grey, elegantly veined and clouded with a pale blue and a light brown; and the bristles are of an amber colour.

DEATH-WATCH. The English name of the pediculus, or wood-louse, a species of termes belonging to the order of aptera, and class of insects, in the Linnæan system. It is nearly of the size of the common louse; and it appears that the ticking noise commonly heard, proceeds either from the male or female, and is expressive of their amorous dalliance. This sound hath long been considered by weak minds as a presage of death in those families where it is heard; and hence this insect is also called *pediculus fatidicus*, *mortifaga*, and *pulsatorius*.

There are two species of Death-Watches; one of which is aptly described by Mr. Allen, in the Philosophical Transactions. According to this gentleman, it is a very small beetle, five sixteenths of an inch in length, of a dark spotted brown colour, and having pellucid wings under the vagina, a large cap or helmet on the head, and two antennæ proceeding from beneath the eyes; and the part with which it beats is the extreme edge of the face, which he calls the upper lip; the mouth being protracted by this bony part, and lying underneath entirely out of sight.

The above account is confirmed by the celebrated Dr. Derham; with this variation only, that instead of striking with the upper-lip, he observed that the animal drew back it's mouth, and beat with it's forehead. This ingenious naturalist is said to have preserved a male and a female in a box for several months, and to have induced one or other of them to beat, whenever he thought proper, by a nice imitation of it's noise; and, by this ticking sound, to have repeatedly excited the male to an amorous connection with the female.

The second species of Death-Watch is an insect apparently very different from the first. The former gives only seven or eight strokes at a time, and very quick; but the latter often beats for several hours together without any intermission, and it's pulsations very much resemble the ticking of a watch. This last, which is a small grey insect, when viewed with the naked eye, appears like a leaf, and originates from a minute white egg considerably smaller than the nut of that animal. In March, the insect is hatched, and creeps about during it's shell after it. When it first quits it's covering, it is even smaller than it's egg, and is at first so frailly distinguishable without a microscope. But as it grows, it is somewhat like the minute wood-borer, and it's incessant chattering condition, which gradually attracts to it's notice.

THE WOOD-BOY. An appellation given by the ancients to a kind of larva of the beetle, which is

astrophyte kind, having ten rays where they are first parted from the body, each of which is repeatedly ramified.

DEER. A numerous genus of animals of the order of pecora in the Linnæan system; the distinguishing characters of which are, that the horns are deciduous every year, solid, and ramified; and that there are eight cutting teeth in the lower-jaw, and none in the upper.

If we compare the internal structure of the bull and the stag, we shall find a striking similitude between them; though, in shape and form, no two animals can be more dissimilar. Though one of those creatures is among the swiftest, and the other the heaviest, of the creation, the following are the slight internal distinctions between them: all the Deer kind are destitute of a gall-bladder; their spleen is proportionably larger; and their kidneys are differently formed.

Deer compose some of those innocent and peaceable animals which embellish the forests and animate the solitudes of nature. The easy elegance of their form, the lightness of their motions, and those large branches which seem rather intended to ornament their heads than to contribute to their powers of defence, their magnitude, their strength, and their fleetness, all conspire to rank them among the first of quadrupeds, and the most worthy objects of human curiosity.

DEER, STAG. The Stag, or Hart, the female of which is called a Hind, and the young a Calf, differs, both in it's magnitude and in the conformation of it's horns, from the Fallow-Deer. The Stag is much larger; and his horns are round; while those of the fallow kind are broad and palmated. The first year, the Stag has properly no horns, but only a kind of corneous excrescence, short, rough, and covered with a thin hairy skin; the second year, the horns are single and straight; the third year, they have two antlers; the fourth, three; the fifth, four; and the sixth, five. The animal's age, however, cannot always be known with certainty by these indications, for sometimes they are more, and frequently less. When arrived at the sixth year, the antlers do not always increase; and though the number may amount to six or seven on each side, the Stag's age is then estimated rather from their size, and the thickness of the branch which sustains them, than from their number.

These horns, notwithstanding their magnitude, are shed annually, and succeeded by new ones. Of the old horns, which are of a solid, firm texture, handles for knives, and other domestic utensils, are usually made; but, while young, nothing can be more tender or soft: and the creature, as if conscious of it's debility, after shedding it's former horns, instantly retires from the rest of the herd, and, hiding itself in solitudes and thickets, never ventures abroad for the sake of pasture, but in the night season. During this interval, which usually happens about the latter end of February or the beginning of March, the new horns occasion a very considerable degree of pain to the poor Stag, and have a keen sensibility of any external impression; at which time also the flies are very troublesome to the animal, who on that account appears disconsolate and dejected.

When the old horns are shed, the new ones do not immediately begin to appear; but the bones of the skull are then invested only with a transparent perosteum, or skin; which, according to anatomy, covers the bones of all animals indiscriminately. This skin, however, soon becomes turgid,

and forms an excrescence containing a considerable quantity of blood, and which gradually appears covered with a downy substance soft as velvet, and nearly of the same colour with the rest of the animal's hair. This tumour daily protrudes from the point like the graft of a tree; and, rising by degrees from the head, shoots out the antlers on each side; so that in a few days, according to the condition of the animal, the whole head is compleated. For some time, however, the horns are very soft, and covered with a sort of bark, which is merely a continuation of the integument of the skull. This bark is velvety and downy, and every where furnished with blood-vessels, which supply the nascent horns with nourishment: as they creep along the sides of the branches, their prints are marked over the whole surface; and, the larger the blood-vessels, the deeper those prints appear. Hence arise the inequalities on the surfaces of the horns of the Deer kind, which we see furrowed all along the sides, the impressions diminishing towards the points, where the parts are as smooth and solid as ivory. But it should be remarked, that the substance of which the horns are composed begins to harden at the bottom, while the superior part remains soft, and continues to grow; from whence we may rationally conclude, that the horns of Deer grow differently from those of sheep or cows, which are invariably observed to increase from their bottoms. However, when the whole head has attained it's full growth, the extremities begin to acquire their solidity; the velvet covering, or bark, together with the blood vessels, dry up, and then begin to fall; which process the animal itself seems to accelerate, by rubbing it's antlers against every tree that it approaches: and in this manner the whole external surface being gradually stripped off, the head at last acquires it's complete hardness, expansion, and beauty.

To enter into a philosophical enquiry with respect to the production of these horns, would lead to an extensive field of doubtful argumentation: suffice it therefore to observe, that if a Stag be castrated when his horns are shed, they will never grow again; and, on the contrary, if the same operation be performed while the horns are in perfection, they will never fall off. If he be deprived of only one of his testicles, he will be destitute of one horn on that side; and if one of them is only tied up, he will want the horn on the opposite side. The quantity of his provisions will also tend to facilitate the growth and expansion of his horns. Buffon asserts, that it is possible to stop their growth entirely by a considerable retrenchment of food; and, as a confirmation of this assertion, nothing can be more obvious than the difference between a Stag bred in a fertile pasture, and undisturbed by the hunter, and one ill fed and liable to perpetual alarms: the head of the former is expanded, his antlers are numerous, and the branches thick; whereas the latter has but few ramifications, the traces of the blood-vessels on them are but slight, and their expansion is inconsiderable. The beauty and size of their horns, therefore, mark the strength and vigour of the animals, for such of them as are sickly, or have been wounded, never protrude that magnificent protuberance so much admired in the Deer kind. Thus the horns may not inaptly be assimilated to a vegetable production grafted on the head of the animal: like vegetables, they grow from the extremities; like vegetables, they are for some time covered with a nutritive

bark; and, like vegetables, they have their annual decay and reproduction. So that, by the assistance of a strong imagination, we might fancy that the leafy productions on which the animal feeds once more vegetate in his horns.

It has been previously remarked, that Stags have no sooner shed their horns, than they separate from each other, and seek the champain parts of the country, remote from all other animals which their situation renders them unable to oppose. In this state of imbecility they continue near three months, before their horns attain to their full growth and solidity; and then, by rubbing them against the branches of thickets, they at length clear them of that skin which had before contributed to their growth and nourishment. Some have roundly asserted, that the horns assume the colour of the sap of those trees against which they are rubbed; but this assertion is undoubtedly erroneous, since it is well known that such Stags as are kept in parks where no trees grow, have a variety in the colour of their horns, which can only be ascribed to the operations of nature.

Soon after these animals are furnished with new horns, they begin to feel the impressions of the rut, or the natural desire of propagating their kind. The old ones are generally the most forward in this business; and accordingly, about the end of August or beginning of September, they leave the thickets, and return to the plains in quest of hinds, whom they court with a loud tremulous voice. At such seasons their necks become remarkably turgid; they appear bold and furious; fly from one place to another; strike with their horns against the trees, and every other opposing object; and continue restless and fierce till they have found the females, who at first avoid them, but are at last overtaken and compelled.

When two Stags are competitors for the same hind, how timid soever they may appear at other times, they now seem agitated with an unusual degree of ardour: they paw up the earth, menace each other with their horns, bellow prodigiously, and desperately engage, seemingly determined either to conquer or die. Such combat usually continues till one of the parties is either completely worsted, or put to flight; and it often happens that the victor is obliged to fight several such battles before he remains the undisputed master of the field. On these occasions, the old ones are generally the most successful, as they possess a much greater degree of strength and courage; and these also are by the hinds preferred to the young ones, the latter being more feeble, and less ardent. However, they are all equally inconstant, confining themselves to one female but for a few days, and then seeking out another, who is, perhaps, not to be enjoyed without a repetition of their former danger.

After this manner the Stag continues to range from mate to mate for about three weeks, the extent of the rutting-time; during which period, he scarcely either eats, sleeps, or rests, but continues to pursue, to combat, and to enjoy. At the termination of this season of insanity, (for such it seems to be with respect to these animals) the creature, which was before very fat, sleek, and glossy, becomes lean, feeble, and timid. Having performed this duty enjoined him by nature, he retires from the herd, in order to seek food and repose; he frequents the verge of his bounds; and selects the most nourishing pastures, where he continues till his strength is renovated. Thus a his whole

life spent in the alternations of plenty and want, of corpulence and leanness, of health and sickness, without having his constitution materially affected by the violence of such transitions.

This animal does not arrive at a state of perfection for upwards of five years, and generally lives above forty: and, indeed, it seems to be a pretty general rule in the animal oeconomy, that every creature lives about seven times the number of years which it continues in a growing state. What, therefore, has been reported by some, with respect to the life of this animal, has undoubtedly originated from ignorance and credulity. It has, indeed, been affirmed, that a Stag was formerly caught in France, having his neck begirt with a collar bearing this inscription—'Cæsar hoc me donavit,' which some have interpreted of Julius Cæsar; but it should be remembered, that Cæsar is a general name for Emperor; and therefore it is more rational to conclude, that one of the emperors of Germany (who are always stiled Cæsars) might have been the donor of such inscription.

However, it is certain that the Stag may differ as to the term of his life, either in respect of the goodness of his pasture, or the repose he may be suffered to enjoy; for these are circumstances which not only influence his age, but also his strength and vigour. The Stags inhabiting the plains and vallies which abound in corn and pasture, are much more corpulent, as well as tall, than such as are bred on rocky wastes or heathy mountains. The latter are low, small, meagre, and incapable of running with the celerity of the former, though they are found to hold out much longer: they are also more artful in evading the hunters; and their horns are usually black and slender, while those of the lowland Stags are reddish and flourishing. So that the beauty and stature of these animals are proportioned to the richness of their pasture and the extent of their security.

The colour of the English Stag is generally red, or a reddish brown, with some black about the face, and a black list down the hinder-part of the neck, and between the shoulders: nevertheless, in other countries, the greatest number of these animals is brown; a few of them, indeed, are white, but such seem to be tinged with a domestic breed. The Stag has the most beautiful eye of any animal that is a native of this climate; and his senses of smelling and hearing are in no less perfection than that of vision. When in the least alarmed, he lifts his head, erects his ears, and stands for a few moments as if in a listening posture. Whenever he ventures on some unknown ground, or quits his native covert, he makes a pause at the skirt of the plain, in order to examine every object around him, after which he turns his face against the wind, for the purpose of discovering by his scent the approach of any enemy. Should a person at some distance whistle, or call aloud, the Stag immediately stops short in his slow measured pace, and gazes on the intruder with a kind of awkward admiration, but if the sagacious animal perceives neither dogs, nor any instruments of destruction levelled against him, he then proceeds forward without betraying the smallest emotion of fear. Man, indeed, is not his enemy he seems to be most apprehensive of; on the contrary, the sound of the shepherd's pipe seems to amuse him with pleasure, and, accordingly, the hunters sometimes make use of that instrument in order to draw the poor animal to his destruction.

When pursued with great deliberation, a Stag

DEE

very delicate in the choice of his pasture; and, when he has satisfied the calls of nature, he retires to the covert of some thicker, in order to chew the cud in security. However, he seems to perform the act of rumination with much greater difficulty than either the cow or the sheep; for the grass is not returned from the first stomach without much straining, and a kind of hiccup, which is extremely perceptible during the whole time of it's continuance: but this defect may probably proceed from the greater length of the neck, and the narrowness of the passage, which in animals of the cow and sheep kind are considerably shorter and wider.

This animal seldom drinks in the winter season, and still less in the spring, while the plants are tender, and covered with the morning dew; but, in the heat of summer, and during the rutting-time, he is observed constantly to frequent rivers and lakes, as well to allay his thirst as to cool his ardour. He swims with great ease and strength, particularly when he is in good condition, his fat keeping him buoyant, like oil on the surface of the water; and, at such seasons, he even ventures out to sea, swimming from one island to another, though frequently several leagues asunder.

The voice of this animal is stronger, louder, and more tremulous, in proportion as he advances in age; and, during the rutting-season, it is even terrible. The cry of the hind or female is not so loud as that of the male, and is never excited but through apprehensions for the safety either of herself or her young; and it may perhaps be unnecessary to add, that she is destitute of horns, and is more feeble and unfit for hunting than the male. As soon as she has conceived, she separates herself from the males, and all intercourse with each other is immediately suspended. The time of gestation continues between eight and nine months; and she seldom produces more than one at a time.

The usual season of parturition is about May, or the beginning of June, during which these creatures are very assiduous to conceal their young in the most obscure retreats. Nor is this a needless precaution, since almost every other animal then becomes their formidable enemy: the eagle, the falcon, the osprey, the wolf, and the dog, as well as all the rapacious animals of the cat kind, are at this period in continual motion, for the discovery of their abodes. But, what appears extremely unnatural, the Stag himself is also their avowed enemy; and the hind is obliged to exert all her industry in order to conceal her young from him, as one of their most dangerous assailants. At this season, therefore, the courage of the male seems to be transferred to the female; for she defends her offspring against her less formidable opponents by force; and, when pursued by the hunter, even exposes herself to danger, for the purpose of diverting his attention from those objects of her regard: she flies before the hounds, in a direct course, with amazing fleetness; and, if she is so fortunate as to escape with her life, she returns to her young after having eluded her pursuers. The calf (for so the young of this animal is called) never quits the dam during the whole summer; and, in winter, the hind, together with all the males under a year old, assemble in herds, which are more or less numerous in proportion to the mildness or severity of the season. At the approach of spring, the season of gestation, they separate, none but those of the age of one year remaining associated. These animals, however, are in general gregarious; and only danger or necessity can possibly divide them.

DEE

Of all the enemies to the Stag, those of the human species appear to be the greatest. Men of every age and nation have made choice of this animal as the object of one of their most favourite pursuits; and those who first hunted from necessity, have continued the practice for the sake of amusement. In this country in particular, hunting has ever been esteemed the favourite diversion of the great; and indeed, originally, beasts of chase had this whole island for their range, they knew no other limits than the ocean, nor acknowledged any particular master.

The jurisprudence of the Roman empire, which was accommodated to the manners of the first ages, established it as a law, that as the natural right of such things as have no proprietor belongs to their first possessor, so all kinds of wild beasts, birds, and fishes, are the property of those individuals who can first catch them. But the northern barbarians, who over-ran the Roman empire, entertaining a strong relish for this rude amusement, and being now possessed of more easy means of subsistence from the lands they had conquered, their chiefs and leaders began to appropriate the sole right of hunting; and, instead of a natural right, they made it the privilege of royalty. When the Saxon kings, therefore, had established themselves into an heptarchy, the chaces were reserved by each sovereign for his own particular diversion: the arts of war and hunting, in those uncivilized ages, constituted the only employments of the great; their active but uncultivated minds were susceptible of no pleasures but such as were of a violent kind, procured exercise for their bodies, and charmed away the languor of reflection. But, as the Saxon kings appropriated those lands only to the business of the chase which before lay waste, so no individual received any injury from the restraint. The case, however, was totally altered when the Norman kings got possession of the throne: the passion for hunting was then carried to excess, and every civil right was involved in universal ruin. Even in a superstitious age, the ardour for hunting was stronger than the consideration of religion: the village communities, nay, even the most sacred edifices, were thrown down, and turned into one extensive waste, in order to make room for animals which were the objects of a tyrant's heedless pleasures; sanguinary laws were enacted for the preservation of the game; and, in the reigns of William Rufus and Henry I. it was less criminal to commit murder than to destroy a beast of chase. Thus royal tyranny prevailed while the Norman line filled the throne; but, when the Saxon line was restored under Henry II. the impolitic rigour of the forest-laws was meliorated: the barons also, for a considerable time, imitated not only the encroachments, but also the amusements, of their monarchs; yet, when property began to be more equally distributed, through the introduction of arts and the progress of industry, these extensive hunting-grounds became more limited; and, as tillage and husbandry increased, beasts of chase were obliged to give way to those which mankind had taken more immediately under their protection.

In the present cultivated state of this country, Stags are almost unknown in their wild, natural condition; and such as remain among us, are kept under the name of Red Deer, together with the Fallow-Deer, but they are much less numerous than formerly. Their excessive ferocity during the rutting-season, and the coarseness of their flesh, have

continued

contributed in a great measure to their extermination. The few that still remain in a wild state are found on the moors which border on Cornwall and Devonshire; in the Highlands of Scotland; and in Ireland, on the mountains of Kerry, where they essentially add to the magnificence and beauty of the romantic scenery of the celebrated Lake of Killarney.

In England, the Stag and the buck are hunted in a similar manner; the animals are driven from their retreats in some park, and pursued through the open country. But those who pursue the wild animals, have a higher object, as well as a much greater variety, in the chase. To let loose a creature whose spirit has been broken by subjection, in order to catch it again, seems to be but a poor pursuit, as the reward, when obtained, is only what had before been given away; but to pursue an animal which owns no proprietor, and which the first seizer may be said to possess, has something in it at least apparently more rational, that rewards the hunter for his toil, and seems to compensate his industry. Exclusive of the superior strength and swiftness of the wild animal, it is endowed with more sagacity to elude the attacks of the hunters, and consequently adds to the pleasures of the chase. In pursuing a Stag turned out of a park, or other inclosure, as it is unaccustomed to danger, so it is but little versed in the stratagems of escape; and as the hunter follows him with the certainty of victory, he feels none of those alternations of hope and fear which originate from the doubtfulness of success.

Peculiar terms have been invented by hunters to express the different objects of their pursuit; and, as these terms may be said to form a part of the natural history of the animal, they are therefore necessary to be known. The professors of almost every science seem to delight in adopting a language familiar only to themselves, and thus accumulate words which, in the eye of ignorance, have the specious guise of knowledge. Accordingly, the Stag, when in his first year, is called a *calf*, or *hind calf*; in his second, a *knobber*; in his third, a *buck*; in his fourth, a *stag*; in his fifth, a *stag*; and, in his sixth, a *bart*: whereas the female, (the hind) in her first year, is called a *calf*, in her second, a *beast*; and, in her third, a *hind*.

The Stag, when in his retreat, is said to *lie low*; and, when he cries, to *bell*. The print of his hoof is called a *flat*; his tail, a *single*; and his ordure, the *faunt*. His horns are denominated his *beads*: when simple the first year, they obtain the name of *brakes*; the third year, *spikes*; the fourth year, that part which bears the antlers is filed the *beam*, and the little impressions on its surface, *glitters*; while those which rise from the crust of the beam are called *pricks*. The antlers also have distinct names: the first which branches off is called the *antler*; the second, the *sub-antler*, and all the rest which grow afterwards are called *royal antlers*, except the highest, which is called the *crest*: the little protuberances about the tops are called *nodules*. The impression on the place where the Stag has reposed, is filed the *layer*, but if it be in a covert, or a thicket, it is called his *bed*. When he has entered a thicket, and those left marks by which his fire may be guessed, it is called an *entry*; when he calls his head, he is said to *water*; and, when he rubs it against the branches of trees, in order to disengage the neck of his horns, he is said to *bay*. When the animal, after

being hard hunted, takes to the water, he is said to *go sail*; when he turns his head against the hounds, he is said to *bay*; and, when the hounds pursue on the scent till they have unharboured him, they are said to *draw on the slot*.

Such is a specimen of the terms used by hunters in pursuing the Stag; many of which are now either become obsolete, or only retained by huntsmen and game-keepers. The chase, however, still continues a favourite sport in those parts of the kingdom where Red Deer abound; and often constitutes the amusement of those whose minds might be supposed capable of more liberal pursuits.

In those few places where this animal remains perfectly wild, that amusement, as already observed, is far superior. The first grand concern of the hunter, when he leads forth his hounds to the mountain's side, where Deer are generally known to resort, is to select a proper Stag for the chase. His ambition is to unharbour the largest and boldest of the whole herd; and for this purpose he examines the track, which if he finds long and large, he concludes that it must have belonged to a Stag, and not a hind, whose footsteps are rounder. Those prints also which he leaves on trees by rubbing his horns against them, demonstrate his size, and point him out as a proper object of pursuit.

In tracing Stags to their haunts, the following particulars are observable. They change their manner of feeding every month. At the conclusion of their rutting-time, which is about November, they feed in heaths and broomy places. In December, they herd together, withdrawing into the bosoms of forests, for shelter from the severity of the weather, where they feed on holm, elder-trees, and brambles. The three subsequent months, (namely, January, February, and March) they separate into companies of four or five; and, venturing towards the margins of the woods, there feed on winter pasture, but sometimes making incursions into the neighbouring corn-fields, in order to devour the tender shoots on their first appearance above ground. In April and May, they rest in thickets and other shady places, seldom venturing forth unless roused by impending danger. In September and October, their annual ardour returns; and then they quit the thickets, and boldly face every danger, without any certainty either of food or shelter.

When, from a knowledge of the foregoing circumstances, the hunters have discovered the residence of the Stag, and the quality of the game, their next business is to uncouple and cast off their hounds in the pursuit; who no sooner perceive the timid animal flying before them, than they open in concert in full cry, following rather by the scent than the view, encouraging each other to persevere in the chase, and tracing the fugitive with amazing swiftness: nor are the sportsmen less ardent, cheering the dogs, and directing their pursuit. On the other hand, the Stag, when first unharboured, seems to fly with the velocity of the wind, leaving his pursuers far behind him; till at length, having gained his former coverts, and no longer hearing the cries either of the hounds or hunters, he stops, views every object around him, and seems to recover his natural tranquillity. But this cessation proves only momentary, for his resolute pursuers continue to trace him, and he is once more apprized of his approaching destruction. He, however, renews his efforts to escape, and again leaves his enemies almost at their former distance: but this

this second attempt rendering him more feeble and languid than before, when his pursuers approach him, he is unable to outrun them with his wonted celerity. The wretched Stag, therefore, is now obliged to practise all his little arts of evasion, which sometimes, though but seldom, prove effectual. In proportion as his strength fails him, the ardour of pursuit is increased; he tracks more heavily on the ground; and this circumstance adding strength to the scent, the cries of the hounds are redoubled, and their approach is accelerated. In this dilemma the Stag takes refuge among the herd, and tries every artifice to shift the impending danger to one or other of his companions. Sometimes he sends forth a little Deer in his stead, and lies close himself, that the dogs may be induced to over-shoot him; and, at others, he breaks into one thicket after another in order to find Deer, rouses them, collects them together, and endeavours to put them on the tracks which he himself has made. All his old associates, however, shun him with the most vigilant circumspection, and leave him to his fate. Thus abandoned by his fellows, the devoted animal has recourse to other stratagems. He doubles and crosses such places as are least liable to retain his scent. He also runs against the wind, not only to cool himself, but the better to hear the voice and judge of the distance of his implacable enemies. It now appears evident that he is sorely pressed; particularly by his manner of running, which, from the bounding easy pace wherewith he set out, is converted into a stiff, short amble: his mouth also becomes black and dry, and entirely destitute of foam; his tongue hangs out; and the big round tear, according to some, is ready to start from his eye. When every other method of escape proves ineffectual, he at last takes to the water, and attempts to cross whatever lake or river he first approaches; and, while swimming, is at all imaginable pains to keep in the middle of the stream, lest, by touching the bough of a tree, or the herbage on the banks, he should communicate his scent to the hounds; nor does he ever swim against the current. In this emergency, too, he often conceals himself under the surface of the water, discovering only his antlers and the tip of his nose. All his resources being now at an end, he at last collects the feeble remains of his strength, in order to oppose those enemies from whom he is utterly unable to escape; and, turning towards them, threatens them with his horns, guarding himself on every side; and for some little time maintains the unequal conflict. In this situation, being enraged to desperation, he furiously attacks the first dog or man that approaches him, and not unfrequently dies revenged: at that time, however, the more cautious hounds avoid him till the whole pack is assembled; after which, being quickly surrounded, and brought to the ground, the huntsman winds a *treble mort* with his horn.

Such is the manner of hunting the Stag in England. But every country has a peculiar method of its own, adapted either to the nature of the climate, the face of the soil, or the genius of the people. The ancient way, however, was very different from that now practised. The huntsmen employed their dogs only to discover the game, not to rouse it: hence they were not very particular either as to the notes of their hounds, or the composition of their packs; and that dog who opened before he had discovered his game, was held in little estimation. They usually endeavoured, by

silent perseverance, rather to find out the retreat of the animal, and to surround it with nets and engines, than to arouse him with their united cries, and thus force him into the toils which they had previously laid for him. In succeeding times, the manner of hunting seems to have undergone some alteration; and in Sicily in particular, the subsequent mode was adopted. The nobility and gentry having been informed which way a herd of Deer passed, gave notice to each other, and appointed a day for a hunting-match. For this purpose, every person concerned was to bring with him a cross bow, and a bundle of staves shod with iron, having each of their heads bored, and a cord passing through and uniting them all. Between each of these staves was hung a bunch of crimson feathers, so disposed, that, on the gentlest breath of wind, they whirled round, and preserved a kind of fluttering motion. After this, the persons appointed to fix these staves withdrew, and concealed themselves in the neighbouring coverts; when the huntsman in chief, entering the fence with his hounds, roused the game with a full cry. The affrighted Deer, which fled on all sides, on approaching the lines, were scared by the fluttering of the feathers, and wandered about within this artificial paling, still awed by the shining and fluttering plumage that encircled their retreat. The huntsman, however, still pursuing, and calling each person by name as he passed his stand, commanded him to shoot the first, second, or third animal, according to his pleasure; and if any one of these persons pressed, or singled out a different creature from that which had been assigned him, it was regarded as a most disgraceful mischance. In this manner the whole herd was destroyed, and the day concluded with mirth and festivity.

There are but few varieties of the Red Deer or Stags of this country, and such are usually of the same size and colour; but the case is far otherwise in many other parts of the world, where they differ in their shape, size, horns, and colour. Those of China, according to Du Halde, are not taller than a common house-dog, and hunting them constitutes one of the principal diversions of the great. Their flesh, while young, is exceedingly tender; but, when they arrive at maturity, it begins to grow hard and tough. The method adopted by the Chinese to catch these animals is pretty singular. They carry with them the heads of some of the females stuffed, whose cry they imitate with great address: on which the male instantly makes his appearance; and, looking on every side, perceives one of these heads, which a hunter, who is himself concealed, holds up to view; and when the Stags, by means of this deception, have approached pretty near, the whole company of the hunters instantly surrounds, and often takes them alive.

The Corsican Stags are likewise very small, being not more than half the size of those which are common to Britain; their bodies are short and thick; their legs are short; and their hair is of a dark brown colour.

In the forests of Germany there is a kind of Stag, called by the ancients the *tragelaphus*; and, by the natives, the *bran*, or brown Deer. It is of a darker colour than the common Stag, but of a lighter shade on the belly; and having long hair on the neck and throat, on that account somewhat resembles the goat.

Animals of the Deer kind, though their species are not very numerous, seem to be disseminated

over all parts of the globe. The continent of America, in which neither the sheep, the goat, nor the antelope, have been originally bred; nevertheless produced Stags, and other animals of the Deer kind, in abundance. The Mexicans have a breed of white Stags in their parks, which, according to Buffon, are called Stags-royal. The Canadian Stags differ principally from those of Europe in having larger horns; and also in the direction of their antlers, which rather revert than project forwards. The same difference of size which is observable among our Stags, is also to be traced in those of the American continent; and, if we may credit Ruysch, the natives have reduced them to the same degree of tameness that we have our sheep, goats, and black cattle: they send them forth in the morning to feed in the forests; and at the approach of night they are brought home again by those herdsmen who have superintended them during the day; and the inhabitants depend solely on the hind for their necessary supply of milk and cheese. Thus we see that an animal which appears to be formed only for the amusement of man, may with facility be brought to supply his necessities.

DEER, FALLOW. The Fallow-Deer and the Stag are as nearly allied as any two animals can possibly be. Alike in shape, disposition, fleetness, timidity, and the superb furniture of their heads, it might naturally be conjectured that they associated together; and yet no two animals avoid each other with more rooted aversion: they never herd in the same place; they never engender together, or form a mixed breed; and, even in those countries where Stags abound, the buck seems to be an utter stranger. In short, they form two distinct families, which, though so seemingly conjoined, are nevertheless very remote; and, though endowed with the same habits, retain a fixed animosity.

As Fallow-Deer are much smaller, so they are of a less robust and savage nature than those of the stag kind. They are seldom found wild in forests; but are generally bred up in parks, where they are either kept for the purposes of hunting or luxury, their flesh being greatly preferable to that of any other animal. Their horns are broad and palmated at their extremities, pointing a little forward, and branched on their hinder sides; they have two sharp and slender brow-antlers, and, above them, two small slender branches; whereas the horns of the stag are round in every part: in the one animal they are flatted and spread like the palm of the hand; and, in the other, they grow like a tree, every branch being shaped like the stem which supports it. The colour of the Fallow-Deer is more various than that of the stag, and its tail is longer; but, in other respects, the affinity is very close.

The horns of the buck, like those of all other animals of this genus, are shed annually, and repaired in the usual space of time: this change, however, happens later with respect to the buck, and consequently his rutting-season approaches nearer to the winter. At that period he is much less furious than the stag; nor does he exhaust himself so much through the violence of his ardour. He never quits his natural pastures in quest of the females, nor attacks other animals with indiscriminate rage; however, the males frequently combat with each other for the possession of the females; and it is not till after repeated conflicts that one buck obtains the sovereignty of the whole

band. A herd of Fallow-Deer is often observed to divide into two parties, and to engage each other with great ardour and obstinacy, as if ambitious of securing some favourite spot of pasturage, and of driving the vanquished party into the coarser and more sterile parts. These factions are headed by their respective chiefs, which are usually the two oldest and strongest of the herd; and these leaders always begin the engagement, the rest fighting under their direction. From the disposition and conduct which appear to regulate their mutual efforts, these combatants are no inconsiderable objects of curiosity: they attack each other in the greatest order; retire, rally, mutually afford their assistance, and never yield the victory on a single defeat; and such contests are generally renewed for several days successively, till one of the parties is obliged to give way, and to retreat to such a situation as is most likely to afford them safety and protection.

The Fallow-Deer is easily domesticated, and feeds on many articles which the stag refuses; by which means he preserves his venison better; and, even after rutting, does not appear entirely exhausted. He continues nearly in the same state through the whole year, though there are particular seasons in which his flesh is chiefly in esteem. This animal browses much closer than the stag; for which reason he is more prejudicial among young trees, which he often strips too closely for recovery. The young Deer eat much quicker, and with more eagerness, than the old; they seek the females at their second year; and, like the stag, are fond of variety. The doe, like the hind, goes with young above eight months, and commonly brings forth one at a time; but the two species differ in this circumstance, namely, that the buck arrives to perfection at his third year, and lives till his sixteenth; whereas the stag does not come to maturity till his seventh year, and lives till his fortieth.

Hunters have invented various names for the buck. In his first year he is called a *fawn*; in his second, a *pricket*; in his third, a *forel*; in his fourth, a *fore*; in his fifth, a *buck of the first head*; and, in his sixth, a *great buck*. The female, (the doe) in her first year, is called a *fawn*; and, in her second, a *tegg*.

The buck is hunted pretty much in the same manner as the stag, except that a less degree of skill is necessary with respect to the former than the latter. He is roused with more facility; and a sufficient judgment may be formed by the view and mark, as to what grove or covert he enters, because he seldom wanders from thence in order to change his layer or place of repose. When closely pursued, he makes towards some strong hold or thicket with which he is acquainted, either in the more shady parts of a wood, or the steep of some mountain; nor does he fly far before the hounds, nor cross and double like the stag: he will take the water, however, when reduced to extremity, but he can neither swim so long nor so swiftly as that animal. Indeed, the strength, cunning, and courage, of the buck, are much inferior to those of the stag; and consequently he affords neither so long, so various, nor so obstinate a chase: besides, being much lighter, he leaves a fainter impression, as well as less powerful scent; and the dogs in pursuit are frequently at a fault.

The buck being a more delicate animal than the stag, he is subject to greater varieties. In England,

DEER

England, there are two kinds of Fallow-Deer, which are said to be of foreign original; namely, the beautiful dappled kind, supposed to have been imported from Bengal; and the very deep brown sort, now so common in many parts of this kingdom, which were brought from Norway by King James I. who, while there, observed that they were so hardy, as to be capable of subsisting throughout the brumal season without fodder, even in that inhospitable climate. He first introduced some of them into Scotland, and from thence into his chaces of Enfield and Epping in the vicinity of the palace of Theobalds; that monarch being extravagantly fond of the diversion of hunting. Since that time, they have multiplied in many parts of the British empire; and England is at present more celebrated for its venison than any other country on the terraqueous globe.

The flesh of the French Fallow-Deer is much inferior, both in fatness and flavour, to that fed in English pastures. The Spanish Fallow-Deer have more slender necks, and are as large as stags, but of a browner colour. Labet informs us, that in Guiana, a country of South America, there are Deer without horns, and much smaller than those of Europe, but resembling them in every other particular. They are very lively, and excessively timid; and, when pursued, shelter themselves in situations where no other animals are capable of following them. The negro hunters watch for them in such narrow paths as lead to their usual places of pasture, and shoot at them as soon as they appear in sight. Their flesh, though seldom fat, is considered as a great delicacy.

All animals of the Deer kind seem equally useful, though their venison is by no means equally good. The uses to which their skins are applied are too well known to need mentioning; their horns, which are very serviceable in various mechanical operations, abound also with that kind of salt which forms the basis of the spirit of hartshorn; and, after these salts are extracted, their remains, when calcined, become a valuable astringent, and answer many salutary medicinal purposes.

DEER, ROE-BUCK. This animal, which inhabits Tartary and China, is also found in most parts of Europe, even as far northward as Norway; and Charlevoix says, that it is pretty common in North America. It was formerly a native of Wales and the northern parts of England; but at present the species no longer exists in any part of Great Britain, except in the Highlands of Scotland.

The Roe-Buck is one of the least of the Deer kind known in our climate, being only about three feet in length, and two in height. The horns, which measure eight or nine inches, are erect, round, and divided into three branches; the body is covered with very long hair, well adapted to the rigours of its mountainous retreats; the lower part of the hair is cinereous; near the extremities there is a narrow bar of black; and the points are yellow. The hair on the face is black, tipped with ash-colour; the ears are long, their insides being of a pale yellow, and covered with long hair; the chest, belly, legs, and insides of the thighs, are a yellowish white; the rump is a pure white; and the tail is very short. The figure of this little animal is very elegant, and its fleetness is equal to its beauty. It differs from the Fallow-Deer in having round horns; from the stag, in the smallness of its size and the proportionable paucity of its antlers; and from every animal of the goat kind, in annually shedding its horns.

DEER

The Roe-Buck seems naturally attached to shady thickets and rising slopes. Though far inferior, both in strength and size, to the stag, it is more beautiful, more active, and more intrepid. Its hair is always smooth, clean, and glossy; and, as it delights in the purest air, it frequents only dry situations. When its young are attacked by the stag, it boldly faces even that animal, and often comes off victorious. All its motions are elegant and easy; bounding with the utmost facility, and continuing the course with little apparent fatigue. It is also possessed of extraordinary cunning in avoiding the hunters; and, though its scent is much stronger than that of the stag, it more frequently makes good its retreat.

Nor does the Roe-Buck differ from the stag only in superior cunning, but also in its natural appetites, inclinations, and entire habits. Instead of herding together, these creatures live in separate families; the sire, the dam, and the young, associate together, and all strangers are excluded from their little community. Every other species of Deer is inconstant in affection; but the Roe-Buck never forsakes its mate; for being generally bred up together from their first fawning, they become so mutually attached to each other, as never afterwards to separate. Their rutting-season continues but fifteen days; namely, from the latter end of October to about the middle of November: during which, they are not, like stags, overloaded with fat; they have none of that strong odour which is peculiar to all others of the Deer kind; nor do they run to any of those furious excesses observable in stags, and which so materially alter their state. On such occasions, the Bucks only drive away their fawns, in order to make room for a succeeding progeny. However, when the season of love is ended, the fawns return to the does, and continue with them for some time; after which they relinquish them entirely, for the purpose of commencing an independent family of their own.

The female goes with young but five months and a half; which peculiarity alone is sufficient to distinguish this animal from all others of the Deer kind, whose time of gestation continues for eight months and upwards. In this respect, the Roe seems allied to the goat kind; though, as already observed, the discrimination between the two races is sufficiently distinct.

When the female is ready to bring forth, she forms a retreat in the thickest part of some wood; being no less apprehensive of the Buck, from which she then separates, than of the most ravenous beast. She generally produces two at a time; and sometimes, though but rarely, three. In about ten or twelve days, the young are able to follow their dam, except in cases of close pursuit, when their strength is by no means adequate to the fatigues of a continued chase. On such occasions, the affectionate tenderness of the dam is very singular; for, leaving her offspring concealed in some deep thicket, she exposes herself to the most imminent danger, flying before the hounds, and employing every artifice in her power to mislead them from those objects of her love in which all her happiness is centered. She courageously engages such animals as are nearly on an equality with herself; attacks the stag, the wild cat, and even the wolf, and her efforts for the protection of her young are not relinquished but with her life. These her struggles, however, frequently prove ineffectual; for numbers of the fawns are often taken alive by the

DEE

the peasants; more are devoured by the dogs; and still more by the wolf, which has ever been considered as their implacable enemy. By such repeated depredations on this beautiful creature, the Roe-Buck is gradually becoming more scarce; and, in many countries, the whole race is totally lost.

These animals, which were once pretty common in England, are at present totally unknown; and, in a few years, the breed will probably be extinct in the Highlands of Scotland, the only part of Great Britain in which they are now to be found. Even in France, where they were formerly extremely numerous, they are at present confined to a few provinces; and, perhaps, in a century or two, the species will there be also exterminated. Bufson indeed observes, that in those districts where Roe-Bucks are chiefly found, they seem to maintain their usual numbers; and that the balance between their increase and destruction is held pretty even: however, the number is in general well known to decrease; for, wherever cultivation takes place, beasts of nature are known to retire. Many animals which once flourished in the world may now be extinct; and the descriptions of the more ancient naturalists, though taken from the life, are frequently regarded as fabulous, because their archetypes are no longer extant.

Those huntsmen who characterize only such beasts as fall under their cognizance, have given names to the different kinds and ages of the Roe-Buck, as well as to those of the stag: thus, the first year they call it a *hind*; the second, a *gyrle*; and, the third, a *hemuse*; but, since the animal itself has been extinct in this country, these appellations have become obsolete.

The fawns continue to follow the Deer eight or nine months collectively; and, on separating, their horns begin to appear, simple and without ramifications the first year, as in those of the stag kind: these they shed at the end of autumn, and renew them during the winter; differing from the stag in this particular, which latter sheds its horns in the spring, and renews them in the summer. When the Roe-Buck has completed the furniture of its head, it rubs its horns against trees, after the example of the stag, and thus divests them of their rough skin, and those blood-vessels which no longer contribute to their nourishment and growth. When these fall, and new ones begin to appear, this animal does not, like the stag, retire to the covert of some wood, but continues to frequent its usual haunts, only stooping with its head, in order to avoid striking its horns against the branches of trees, the concussions of which it seems to feel with exquisite sensibility.

As the growth of the Roe-Buck, till its arrival at maturity, is much more rapid than that of the stag, so its life is proportionably curtailed. It seldom lives more than twelve or fifteen years; and, if kept in a state of domestic servitude, its existence is abridged to seven or eight. Being of a very delicate constitution, it requires variety of food, air, and exercise. It must be paired with a female, and kept in a park of considerable extent. It can easily be subdued, but never perfectly tamed. No arts can teach it familiarity with its feeder, much less to shew any attachment to him; but it always retains some portion of its natural wildness. It is subject to timidity from the slightest occasions; and, in attempting to escape, it sometimes dashes itself with such violence against the walls of its inclosure, that it injures its limbs so as to be ut-

DEE

terly disabled. Whatever care is taken to reclaim this creature, it can never be fully relied on; and it is liable to frequent fits of capricious fierceness, sometimes attacking its supposed enemies with no small degree of force and impetuosity.

The voice of the Roe-Buck is neither so loud nor so frequent as that of the stag. The young ones have a peculiar way of calling to the dams, which the hunters imitate with such exactness, as frequently to allure them to their destruction; and, on particular occasions, they become as it were intoxicated with their food; which, during the spring, is supposed to ferment in their stomachs. In summer, they keep close under covert of the forests, and seldom venture abroad, except in very warm weather, in order to allay their thirst at some neighbouring stream. In general, however, they are satisfied with the morning dew, and rarely gratify their appetites at the expence of their safety. They are generally observed to prefer the tender branches and buds of trees to corn or other vegetables; and it is universally allowed, that the flesh of a Roe-Buck near two years of age is one of the greatest known luxuries; though, perhaps, its scarcity may somewhat enhance its value.

This animal is more common in America than in Europe, and the varieties are more numerous. With us, indeed, there are but two known ones; the red, which is the larger sort; and the brown with a spot behind, which is inferior in size. In Louisiana, where the Roe-Buck is very common, the inhabitants in a great measure subsist on its flesh, which tastes like well-fed mutton. It is also found in Brazil, where it obtains the name of *cuguacu apara*; but it differs from the European breed in some slight deviations in the horns. This animal is also said to be found in China; but those authors who have described it, seem to confound it with the musk-goat, an animal of a very different nature.

DEER, MOOSE, or ELK. This animal is a native both of the old and new world; being known in Europe under the name of the Elk, and in America under that of the Moose-Deer. It is sometimes, though rarely, caught in the forests of Germany and Russia; but it is very numerous in North America, where the natives trace it through the snow. However, the accounts of this animal are extremely various; some making it as large as the elephant, and others no bigger than the horse.

The stature of the Moose-Deer being its principal peculiarity, it were to be wished that naturalists had been sufficiently explicit in their descriptions of it. If we were to judge of the size of this animal from some horns which have at times been casually dug up in Ireland, it might reasonably be conjectured to be at least ten feet high. Goldsmith informs us, that he has seen one of those horns, which measured ten feet nine inches from tip to tip; and the accurate Pennant says, that he met with one, in the house of the Hudson's Bay Company, which weighed fifty-six pounds, was thirty-four inches in length from tip to tip, and the breadth of the palm was thirteen inches and a half. Between these two accounts there is an amazing difference; and unquestionably there was a great disparity in the animals which supported such horns. From the dimensions of the former, it appears that an animal of an extraordinary size would be required to produce them. No small degree of strength would be necessary to sustain a head having such extensive and heavy antlers,

antlers; and it is not to be doubted that the bulk of the body must have been proportionable to the size of the horns. As to the more noble animals, Nature observes a perfect symmetry; and it would be unjust to suppose that she failed in this particular instance.

A young female, kept a few years since at the late Marquis of Rockingham's at Parsons Green, is thus described by the ingenious Pennant. 'It was about a year old, and measured five feet, or fifteen hands, to the top of the withers; the head alone was two feet long; the length of the animal, from the nose to the tail, was about seven feet; the neck was much shorter than the head; the mane was thick, short, erect, and of a light brown colour; the eyes were small; the ears were one foot long, very broad, and slouching; the nostrils were very large; the upper lip, which was square, projected considerably over the lower; and in the middle there was a sulcus, so deep as to appear almost bifid: the nose was broad; under the throat there was a small excrescence, from whence depended a long tuft of coarse black hair; the withers were very high; the fore-legs were three feet three inches long, and from the bottom of the hoofs to the end of the tibia two feet four inches; the hind-legs were much shorter than the fore ones; the hoofs were very much cloven; and the tail was very short, dusky above, and white beneath. The colour of the body in general was a hoary black; but about the face there was a greater portion of grey than in any other place.' This animal, which was brought from North America, was called the Moose-Deer. A male of this species, and the horns of others, having been imported into England of late years, prove this creature, on comparing it's horns with those of the European Elk, to be one and the same animal.

As the female animal above described was only one year old, we may reasonably conclude that the Moose-Deer, especially in America, grow to an enormous size. Nevertheless, the accounts given by Jocelyn and Dudley of the size of the American Moose-Deer seem to be greatly exaggerated; the former asserting, that some are found twelve feet high, and the latter making it eleven: however, Charlevoix and others describe it as being of the size of the horse, or the Auvergne mule, which is a very large species; and Jocelyn and Dudley have probably been too credulous, with respect to the relations of those hunters and Indians who were fond of the marvellous. It is indeed certain, that the Elk is common to both continents; and that the American one, having the advantage of ranging in more extensive forests, and of more luxuriant food, grows to a larger size than the European. In all quarters of the world, however, it is timid and gentle, content with it's pasture, and unwilling to disturb any other animal when it can obtain a supply for itself.

In the year 1742, a female of the European kind was exhibited at Paris, which was caught in a forest of Red Ruffia. Though then young, it was six feet seven inches high; from the tip of the nose to the insertion of the tail, it was ten feet; and the circumference of the body was eight feet. The hair, which was long and coarse, resembled that of the boar; the ears were eighteen inches long, and not unlike those of the mule; under the throat there was a beard like that of the goat; a bone, as large as an egg, projected in the middle of the forehead between the horns; and it made use of it's

fore-feet as a defence from the assaults of it's enemies. It's exhibitors asserted, that it ran and swam with astonishing swiftness, and that it was extremely fond of water. It's daily allowance of food was thirty pounds of bread, besides hay; and it's beverage about eight pails of water. It was docile and familiar, and sufficiently submissive to it's owner.

The foregoing account circumstantially differs from that we have received of the Moose, or American Elk. Of this there are two kinds, namely, the common light grey Moose, which is not very large; and the black Moose, which grows to an enormous height. Dudley observes, that a certain female of the black Moose kind, of the age of four years, was within one inch of seven feet high. However, all animals of this kind have flat palmated horns: at the head there is a short trunk, but it soon spreads to at least a foot in breadth, and is furnished with a kind of small antlers like teeth on one of the edges. In this particular all animals of the Elk kind agree, as well the European Elk as the grey and black Moose-Deer.

These animals delight in cold countries, feeding on grass in summer, and on the bark of trees in winter. When the ground is wholly covered with deep snow, the Moose-Deer herd together under tall pine-trees, from which they strip the bark, and remain always in those parts of the forests which yield them that kind of subsistence. At these seasons the natives prepare to hunt them; and particularly when the sun begins to melt the snow by day, and is frozen again at night; for then the icy crust which covers the surface of the snow is too weak to support their weight, and therefore retards the motions of the animals. The Indians no sooner perceive a herd of them at a distance, than they prepare for the pursuit of one of them; which is not, as in some countries, the amusement of an hour, but is attended with toil, difficulty, and danger. The timorous animal, on observing the first approach of it's enemies, immediately endeavours to escape, but sinks at every step. Still, however, it pursues it's course maugre a thousand obstacles: the snow, which is often upwards of four feet deep, yields to it's pressure, and impedes it's speed; the sharp ice wounds it's feet; and it's towering horns are frequently entangled in the branches of trees: these, however, are broken down by the animal with facility; and, in whatever path the Moose-Deer runs, it is easily traced by the continual snapping of these branches. In this manner the chase is sometimes continued for a whole day; and, at others, for two or more successive days; the pursuers being often no less excited by famine, than the pursued accelerated by fear. Perseverance, however, generally succeeds; and the Indian who first comes near enough, darts his lance at the Moose-Deer with unerring aim, which sticking in the poor creature's body, increases it's efforts to escape. The devoted animal now proceeds till it's pursuers once more overtake it, and the blow is repeated: on which it again summons forth all it's remaining vigour, in order to get a-head; but being at last quite worn out through fatigue and loss of blood, it sinks at once, and becomes an easy prey.

The flesh of the Moose-Deer, which is extremely well tasted and nutritive, well repays the exertions of the hunters. The hide is strong, and so thick, that it is generally bullet proof: however, it is soft and pliable; and, when tanned, is exceedingly light, yet extremely durable. The fur is a light grey in some, and blackish in others; and, when

DEE

viewed through a microscope, appears spongy like a bull-rush, and is smaller at the roots and points than in the middle; for which reason it lies very flat and smooth; and, though ever so much ruffled, still returns to it's former state. The horns also are very valuable, inasmuch as they are applied to all those purposes for which hartshorn is beneficial.

This animal is said to be subject to the epilepsy, as it frequently falls down when pursued, and thus becomes an easier prey; on which account some have imagined the hinder hoof to be possessed of an antidote against all epileptic disorders. This, however, may be regarded as a vulgar error; as well as the petty fiction of the animal's curing itself of that disorder by the application of it's hinder hoofs to it's ears.

The pace of Moose-Deer is somewhat singular, being a high shambling trot; but they move with great celerity. In Sweden, they were formerly much used in drawing sledges; but, as the escape of criminals was frequently effected through their means, the use of them has been long prohibited under very severe penalties.

Though Moose-Deer are in general inoffensive animals, during the rutting-season, and when wounded, they become very furious, and attack whatever comes in their way with the united efforts of their horns and hoofs.

DEER, REIN. The Rein-Deer, which is the most useful, as well as extraordinary, of all animals of the Deer kind, inhabits the frigid regions of the north: and all attempts to reconcile it to more southern ones have proved ineffectual; for, when transported from it's native soil to a more propitious one, it soon feels the influence of the change, and, by a gradual decline, expires in a very few months. Nature seems to have fitted this animal entirely for the necessities of that hardy race of mortals who live near the pole. It is met with farther north than any other hoofed quadruped. In America, it is found in Spitzbergen and Greenland, but not farther south than Canada; in Europe, it inhabits Samoiëda, Lapland, and Norway; in Asia, it traverses the north coast as far as Kamtschatka, and the interior parts as low as Siberia; but, in Africa, it is totally unknown; nor does it indeed appear in any country where other animals can supersede it's utility. From this creature alone the natives of Lapland and Greenland supply most of their wants. It answers the purposes of a horse, in conveying themselves, as well as their humble furniture, from one mountain to another; those of the cow, in affording them milk; and those of the sheep, in furnishing them with a warm kind of cloathing perfectly adapted to the climate: the flesh serves them for food; and the tendons for bowstrings; which last, when split, supply the want of thread. Thus, from this animal alone, the inhabitants of those hyperborean regions reap as many advantages as we derive from many; so that Providence, as a compensation for the numerous local disadvantages which they experience, has given them this faithful domestic, more patient, as well as more beneficial, than perhaps any other on earth.

The horns of the Rein-Deer are large, but slender, bending forwards, and palmated towards their tops; with brow-antlers broad and palmated. Both the male and female are furnished with horns; but those of the latter are of inferior dimensions, and have fewer branches. The height of a full-

DEE

grown Rein-Deer is about four feet six inches; it is lower, and stronger built, than the stag; it's legs are shorter and thicker; and it's hoofs are also broader. It's hair is very thick; it's ears are large; and it has always a black space round the eyes. It's pace, which is rather a trot than a bounding motion, it is capable of continuing for a whole day, without appearing to be fatigued. It's hoofs are cloven and moveable; and, in walking, it spreads them abroad, in order to prevent it's sinking in the snow. When it proceeds on a journey, it lays it's horns on it's back; while there are two branches which overhang it's forehead, and almost cover it's face.

The following circumstance seems peculiar to this animal and the elk; namely, that a pretty loud cracking noise is heard as they move along: this sound arises from their manner of treading; for, as each of the animals rests on it's cloven hoof, it spreads on the ground, and the two divisions separate from each other; but, when it is lifted up, the divisions close again, and, striking against each other, occasion the above noise.

When the Rein-Deer first shed their hair, they are of a brown colour; but, in proportion as the summer season advances, their hair begins to grow whitish; and at last they are nearly grey. Their necks are covered with long depending hair, coarser than that on any other part of their bodies; and their feet, just at the insertion of the hoofs, are surrounded with rings of white.

After the rutting-time, which happens towards the latter end of November, these animals shed their horns, which are not compleatly furnished again till towards autumn. The females always retain theirs till they bring forth; and, if they prove barren, which is not unfrequently the case, they do not shed them till winter. The castration of Rein-Deer does not prevent the shedding of their horns; but the time of this annual divestment is accelerated or retarded according to the condition of the animals.

In Lapland, where these creatures constitute the principal wealth of the natives, some of them frequently possess upwards of a thousand head in a single herd. The mountainous part of this country is sterile, bleak, and totally uninhabitable during the winter; but, in the summer season, it is the most desirable situation of this inhospitable climate, and by far the most populous. The Laplanders generally reside on the declivities of the mountains, in small cottages, three or four of which are erected contiguous to each other; and in them they lead a chearful, innocent, and social life. On the approach of winter, however, they are obliged to descend into the plains, each individual bringing with him his whole herd, and leading it to those spots where the pasturage appears most luxuriant.

The woody part of the country is still more desolate and forbidding; for there the whole face of nature presents a rueful scene of trees devoid of fruit, and plains without verdure. As far as the eye is capable of reaching, nothing is to be seen, even in the midst of summer, but barren fields, covered only with a kind of moss almost as white as snow; no grass, no agreeably diversified landscapes, appear, but only a few solitary pine-trees, which have escaped the frequent conflagrations by which the natives burn down their forests. What is still more extraordinary, as the whole surface of the earth is cloathed in white, so, on the contrary, the forests

D E E

forests seem to the last degree black and gloomy: while one species of moss gives the fields a snowy appearance, another kind blackens the trees, and conceals their verdure. This moss, however, which deforms the country, serves as the only support of the Rein-Deer.

As soon as the summer begins to appear, the Laplander, who had fed his Rein-Deer on the lower grounds during the winter, drives them up the mountains, leaving the woody country, and the low pasture, which at that season are in a most deplorable condition. The gnats, bred by the vivifying heat of the sun in the marshy bottoms and weedy lakes with which this country abounds more than any other part of the world, are then all on the wing, and darken the atmosphere, like clouds of dust in a windy day. The inhabitants, at this season, are obliged to daub their faces with pitch mixed with milk, in order to shield them from the depredations of these noisome insects; and every place is then so much infested by them, that the natives dare hardly open their mouths lest they should be suffocated; for these vermin, from their numbers and minuteness, enter their nostrils and eyes, and scarcely suffer them to be at ease for a single moment. But these insects are chiefly inimical to the Rein-Deer; for the horns of these animals being then in their tender state, and possessed of extreme sensibility, a famished swarm of these gnats instantly settles on them, and drives the poor animals almost to distraction. In this extremity, there are two remedies to which these quadrupeds, as well as their proprietors, are obliged to have immediate recourse. The one is, for both parties to shelter themselves near a large fire of tree-moss adjoining to their cottage, the smoke of which extending to a considerable distance, repels the gnats; and thus one inconvenience excludes another and greater. The other consists in ascending to the summits of the highest mountains, where the air is too thin, as well as too cold, for these insects to exist: there the Rein-Deer are often glad to continue for whole days together, though almost without any subsistence, rather than venture downward to lower situations, where, though they might probably meet with food congenial to their appetites, they would be destitute of every defence against their relentless persecutors.

But gnats are not the only insects which molest these useful animals; there is a species of gadflies which are still more formidable to them. These insects are bred under their skins, where their eggs have been deposited the preceding summer; and they are no sooner produced as flies, than they again endeavour to deposit their eggs in some situations similar to those from which they before emerged. Whenever, therefore, these flies appear over a herd of Rein-Deer, they put the whole flock in motion; who being aware of their enemies, exert all their little arts either to avoid or terrify them. Their endeavours, however, are too generally without success; for the gadflies deposit their eggs with great facility; which burrowing under their skins, lacerate them in various places, and often produce disorders for which the natives have not as yet discovered any proper specific.

In the mornings, as soon as the Lapland herdsmen drive their Deer to pasture, they employ their utmost care to hinder them from scaling the summits of the mountains, where there is generally little or no food, but to which the animals eagerly strive to ascend, in order to be at a distance from

D E E

their adversaries. At such times there are usually strong contests between the dogs and the Deer; the latter endeavouring to climb the hills, and to gain their tops, which are perpetually covered with snow; and the former driving the latter downward to those spots where their food is most plentiful, and where both the men and dogs guard them throughout the whole day with the utmost precaution, and drive them homeward at the proper milking periods.

The season of parturition is about the middle of May; and the females continue to give milk till about the middle of October. Every morning and evening during that interval, the herdsmen return to their cottages with their Deer, for the purpose of milking them; in which the women having previously lighted up smoky fires, thereby repel the insects, and keep the Rein-Deer in a quiet state. Every female affords nearly one pint of milk; which, though thinner than that of the cow, is nevertheless sweeter and more nourishing. After being milked, the herdsmen drive them back to pasture; for they neither fold them, house them, nor provide for their subsistence, during the winter, nor improve their pasture by cultivation.

On the return of winter, when the gnats and flies are no longer to be dreaded, the Laplander, as already observed, descends into the lower grounds; and, as there are but few to dispute the possession of that desolate country, he has then a very extensive range for his herds. Their chief, and almost only food, at this season, is the white moss already mentioned, which, from its supplying these animals with food, is called lichen rangiferinus. This plant, though unpleasing to the spectator who has been accustomed to more propitious climates, is esteemed by the natives as one of the choicest benefits and most indulgent gifts of nature. While their fields are cloathed with moss, they envy neither the fertility nor the verdure of a southern soil; and, warmly habited in their Deer-skin cloaths, with shoes and gloves of the same materials, they intrepidly drive their herds along the deserts, ignorant of any higher luxuries than those which their milk and smoke-dried flesh afford them. Inured to the climate, they sleep in the midst of ice; or, waking, dose away their hours amidst the fumes of tobacco; while their faithful dogs perform the parts of active substitutes, and keep their herds from straggling. The Deer, in the mean time, with instincts adapted to the soil, search out their food, though buried under the deepest snows: they turn it up with their noses, after the manner of swine; and, even though the surface of the snow be frozen, their hides are so very hard in those parts, that they easily overcome these difficulties. It sometimes however happens, though but seldom, that the winter commences with rain; and a frost ensuing, covers the whole country with a glazed crust of ice. In that case, both the Laplander and his Rein-Deer are in a manner undone; for having no provisions laid up against accidents, his only resource is to cut down such large pine-trees as are encrusted with moss; which affording but a very scanty supply, the greatest part of the herd inevitably perishes, without any possibility of assistance. It sometimes also happens, that even this supply cannot be had; for the Laplanders often burn down their woods, in order to improve and fertilize the soil which produces the moss; and in this case nothing but ruin presents itself, and hope sets in despair.

Thus

Thus the pastoral life, which is no longer known in populous and well-cultivated countries, is still continued near the pole. Neither the coldness of the winter, the length of the nights, the wildness of the forests, nor the rambling disposition of the herd, interrupt the regular tenor of the Laplander's guiltless life. By night as well as day he attends his favourite cattle, and is but little affected even in a season whose inclemency would prove destructive to the enervated sons of warmer climates. He neither manures his ground, nor brings in his harvests; nor is he the hireling of another's luxury, for all his labours tend to obviate the necessities of his own situation; and these he undergoes with cheerfulness, as he is certain of reaping all the fruits of his industry. If, then, it was our business to compare the Laplander with the peasant of more southern climes, we should have little reason to pity his situation: the climate which he inhabits is rather terrible to us than to him; and, in other respects, he is blessed with liberty unbounded, and plenty adequate to the utmost of his desires. His Rein-Deer, in which all his cares centre, supply him with all that simple nature requires, and even afford him every convenience which his situation admits of.

The Rein-Deer of this country are of two kinds, namely, the wild and the tame. The wild are larger, stronger, and more mischievous, than the tame: their breed, however, is preferred to that of the latter; and the female of the tame kind is often sent into the woods, from whence she returns home impregnated by a male of the wild kind. These are the best adapted for drawing of sledges, to which they are early accustomed by the Laplanders, who yoke them to those carriages by means of straps encircling their necks, and depending between their legs. These sledges, which are exceedingly light, have their bottoms shod with the skins of young Deer, the hair being turned to slide on the frozen snow. Those persons who sit in these vehicles guide the animals by the help of cords fastened round their horns, encouraging them to proceed by their voices, and spurring them on with goads. Some of the wild breed frequently prove refractory, and turn upon their drivers; who on such occasions have no other resource but to cover themselves with their sledges, and to suffer the animals to vent their fury on them.

But no creatures can be more active, patient, and alert, than the tame Rein-Deer; for, when urged, they will trot nine or ten Swedish miles, or between fifty and sixty, at one stretch. However, in such cases, the poor obsequious animals fatigue themselves to death; and, if not prevented by an early dispatch, will die in a day or two afterwards. In general, they are capable of travelling about thirty miles without either halting or sustaining any damage from their efforts. This mode of journeying, which is the only one in Lapland, can only be practised in winter, when the snow is glazed over with ice; and, though it is a speedy method of conveyance, and indeed the only alternative in that country, it is not effected without danger, inconvenience, and trouble.

To render these useful animals more obedient and beneficial, they are generally castrated; which operation the Laplanders perform with their teeth. Such as have undergone castration, are more easily fattened than others, as well as more capable of drawing their sledges. One male is usually left entire for every six females; and these continue in

rut from the feast of St. Matthew to near Michaelmas. At this period their horns being perfectly burnished, their contests with each other are very fierce and obstinate. The females do not begin to generate before they arrive at the age of two years; after which they continue breeding regularly every year till they become superannuated. They go with young about eight months, and generally bring forth two at a time. The affection of the dam for her young is very remarkable; for, when they happen to be separated from her, she will return from pasture, continue calling round the cottage for them, and never desist till they are laid, either dead or alive, at her feet. The fawns are at first of a light brown colour; but, as they grow up, they become darker; and at last the old ones are of a brown almost approaching to blackness. The young follow their dams two or three years; and do not arrive at their full growth till four, when they are broke, and trained to drawing the sledges; in which employment they continue serviceable for four or five years longer. The longest period of their existence seems to be limited to fifteen or sixteen years; and, when they have attained their proper age, the Laplanders generally kill them for the sake of their flesh and hides: this they perform by thrusting their knives through the hind-parts of their necks into their spinal marrow, on which the animals instantly fall; and the arteries which lead to their hearts being cut, the blood discharges itself into the cavities of their breasts.

Scarcely any part of the Rein-Deer can be deemed useless. As soon as it begins to wax old, and some time before the general season of love, it is killed, and the flesh dried in the air: it is also sometimes hardened by means of smoke, and laid up for travelling provision when the natives migrate from one part of the country to another. During the winter, these animals constitute the only food of the Laplanders; and every four individuals in a family are allowed one Rein-Deer for their subsistence. In spring, the natives spare their herds as much as possible, and draw the principal part of their nourishment from the sea. In autumn, they live wholly on fowls, which they either kill with cross-bows, or catch in gins: nor is this a scanty supply; for, at that season, sea-fowls arrive in such abundance, that the ponds and springs are entirely covered with them. These birds, which are not very timid, and generally become an easy prey, are chiefly allured to such places by those swarms of gnats which, as already observed, overspread the whole country during the summer season; and now recompense their injurious treatment of the Rein-Deer by inviting such vast numbers of these fowls as abundantly supply the natives with food for at least one-fourth part of the year.

The milk of the Rein-Deer, when fresh, is warmed in a cauldron, and thickened with runnet; and then the curd is pressed into cheeses, which are small, and well-tasted: these cheeses never breed mites, as in other countries; and probably they are unknown in Lapland. After this process, the whey which remains is warmed up again, and becomes of a consistence as if thickened with the whites of eggs. On this simple food the Laplanders feed for a considerable part of the summer. They seldom make any butter, their milk affording a very small quantity of cream; but what is turned to this purpose strongly resembles suet both in taste and consistence. Milk is never kept in Lapland till it becomes sour; nor does it constitute any part

of that variety of dishes so common in more southern countries. The only delicacy procured from it arises from the boiling it up with wood-sorrel, and coagulating it; after which the whole is put into casks, or Deer-skins, and deposited under-ground as a reserve for the winter season.

The skin of this animal, however, is still more valuable than either of the above acquisitions. From that part of it which covers the head and limbs, are made those strong snow-shoes which shield the feet of the natives from the inclemencies of the brumal seasons. Of the other parts they make garments, which are extremely warm, and cover them from head to foot: the hair is worn on them externally; and they are sometimes lined internally with the fur of the glutton, or some other animal of the climate which is provided with a warm skin. Their beds are likewise composed of the skins of the Rein-Deer; and are spread, on each side of the fire, upon some leaves of the dwarf birch-tree; which, without any other addition, afford a pretty comfortable lodging. Numbers of garments, formed of the skins of Rein-Deer, are annually imported into the more southern parts of Europe, where they are found so effectual in repelling the cold, as to be worn even by persons of the highest quality.

Though Rein-Deer are very vigorous and hardy animals, they are obnoxious to peculiar diseases. It has already been observed what injuries they sustain from gnats and gad-flies. Their hides are often pierced in various parts by the latter of these insects; and numbers of them die in their third year from this sole cause. Their dugs also frequently burst in different places, when blood is emitted instead of milk. They sometimes contract a loathing to their food; and, instead of eating, stand still and ruminate. They are also, like the elk, troubled with vertigoes; and, in that case, usually run round and round till they expire. The Laplanders judge of their state by the manner of their turning: if they move to the right, they suppose their disorder to be but slight; but, if to the left, they then deem them incurable.

Rein-Deer are also subject to ulcers near their hoofs, which disqualify them either for travelling or keeping among the herd. But the most fatal disorder incident to these animals, is that which the natives call suddataka, to which they are liable at all seasons. The instant this disease attacks them, the poor creatures breathe with great difficulty; their eyes begin to stare, and their nostrils to expand: they then also acquire an unusual degree of ferocity, attacking every object that comes in their way with indiscriminate fury. Still, however, they continue to feed, as if in perfect health; but they desist from chewing their cud, and lie down more frequently than before. In this manner they continue, daily consuming and becoming more emaciated, till at last they die through mere inanition; nor has a single instance ever occurred of one of these animals having survived this cruel disorder, which, notwithstanding it has but lately made it's appearance in that part of the world, has spoiled whole provinces of these valuable creatures. This malady being very contagious, the instant the Laplanders perceive any animals belonging to their flocks infected, they immediately dispatch them. When dissected, a frothy substance is found in their brains, and round their lungs; their intestines are lax and flabby; and the spleen is almost totally wasted.

Besides the maladies natural to Rein-Deer, they

are liable to many adscititious evils. Bears, and other wild beasts, often commit depredations on the herds; and the creature called the glutton, in particular, is the most dangerous and fatal enemy. The contests between these irreconcilable animals are not less frequent in North America than in Lapland; in the former of which countries the Rein-Deer is called the caribou, and the glutton the carcajou: this animal, which is not larger than a badger, frequently lies unobserved, for whole weeks together, among the branches of some spreading tree; and, whenever the wild Rein-Deer is passing underneath, it instantly drops down, and fixes it's teeth and claws in the creature's neck. In vain does the wounded animal fly for protection to the thickest shades of the forest; the glutton still maintains it's hold; and, though it frequently loses some part of it's skin and flesh by rubbing against the surrounding trees, it seldom relinquishes it's object till it has obtained a compleat victory.

DEER, VIRGINIAN. The Virginian Deer are about the size of the English Fallow-Deer, and of a light brown colour. Their tails are longer than those of the English bucks; and they appear to be a distinct species, peculiar to America. They are gregarious as well as very restless animals; but they are not remarkable for their ferocity. Their flesh, though arid, is of the utmost importance to the Indians, who dry it for their winter provision. Their skins form a valuable article of commerce, vast numbers of them being annually imported into Great Britain. In the northern parts of America, they feed, during the long and severe winters to which that climate is subject, on that kind of moss which depends in long strings from the trees. Their horns, which are slender, and bend greatly forwards, have numerous branches on their interior sides; but they are destitute of brow-antlers. These animals, which are tamed with great facility, may be trained to range the woods during the day, and to return to their owners at night.

DEER, SPOTTED AXIS. The body of this animal, which is about the size of the Fallow-Deer, and of a light red colour, is beautifully marked with white spots; and along the lower part of the sides, next the belly, there is a line of white. The tail, which is about the length of that of the Fallow-Deer, is red above, and white beneath. The horns are slender, and triple-forked; the first branch rises near the base, the second near the top, and both point upwards.

The Spotted Axis Deer inhabits the banks of the Ganges, and the islands of Ceylon and Java. It is capable of enduring the rigours of an European climate, and has been known to breed in Holland. It is a very tame animal, and possesses the sense of smelling in an exquisite degree: and, though extremely fond of bread, it will not touch any that has been breathed on; a peculiarity also observable in some other animals.

DEER, GREAT AXIS. This animal is of a reddish brown colour, and it's horns, which are trifurcated, very thick, strong, rugged, and of a whitish hue, measure two feet four inches between tip and tip. These kind of Deer inhabit the islands of Borneo and Ceylon; and, according to some naturalists, are as tall as horses. The Dutch call them elanden, or elks. In Borneo, they are found in low marshy places; for which reason they are called, in the Javan and Malayan tongues, Mejangan Ban-joe, or water-flags.

There is another species of these animals of an

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inferior size, furnished with rough and strong trifurcated horns. They are of a light red colour; without any spots, but sometimes varying to white; and are esteemed very curious. They inhabit the dry mountainous forests of Ceylon, Borneo, Celebes, and Java, in large herds. In Java and Celebes, where they grow remarkably fat, there are usually great hunting-matches; and numbers of them are frequently killed at one time. Their flesh is cut into small pieces, and dried in the sun.

DEER, PORCINE. The height of this animal, from the shoulders to the hoofs, is about two feet two inches; and it's length, from the tip of the nose to the insertion of the tail, is three feet six inches. It's horns, which are slender and trifurcated, are thirteen inches long, and six inches distant at the base. The head is about ten inches long; the body is thick and clumsy; the legs are fine and slender; and the tail is about eight inches in length. The upper parts of the neck, body; and sides, are of a brown colour; but the belly and rump are lighter. This animal, which derives it's name of Porcine, or Hog-Deer, from the extraordinary thickness of it's body, has been occasionally imported into this country from India; and it is also found in the island of Borneo.

DEER, RIB-FACED. This species is so called from having three longitudinal ribs, which extend from the horns to the eyes. The horns, which are placed on a bony projection, are elevated three inches above the scull, and covered with hair; they are also trifurcated, the upper fork being hooked; and from the upper jaw on each side there hangs a kind of tusk. This creature bears a pretty strong resemblance to the Porcine Deer, and is somewhat smaller than the roe-buck. It is a native of Java and Ceylon; and, in the Malayan tongue, it is called kidang. These kinds of Deer are very numerous in those countries; and their flesh is much esteemed for it's delicacy and flavour.

DEER, TAILLESS. The colour of this animal resembles that of the roe-buck; and it's whole coat, which is excessively thick, appears quite rough and erect in the spring season. The horns are trifurcated, and very rugged at their bases; the hair about the eye-lids and orbits is long and black; the ears are internally covered with a very thick fur; the nose is black; and a broad cutaneous excrescence above the anus supplies the want of a tail.

These animals are very common in all the temperate parts of Russia and Siberia, especially the shrubby mountainous tracts beyond the Wolga; and also in the mountains of Hyrcania. At the approach of winter, they descend into the open plains, and their hair at that season assumes a hoary appearance. The Persians denominate this species of Deer the ahu; the Tartars, the sarga; and it is at present considered as the Scythian antelope by the inhabitants of the Russian empire.

DEER, MEXICAN. This creature is about the size of the European roe; the colour of it's hair is reddish; and, when young, it is spotted with white. It has strong, thick, rugged horns, bending forwards, ten inches long, and nine between point and point. The head is large; the neck is thick; and the eyes are full and bright.

This species, which inhabits Mexico, Guiana, and Brazil, is found not only in the interior parts of these countries, but also on the borders of their plantations. It is very distinct from the roe of the old continent; and it's venison is inferior to that of Europe.

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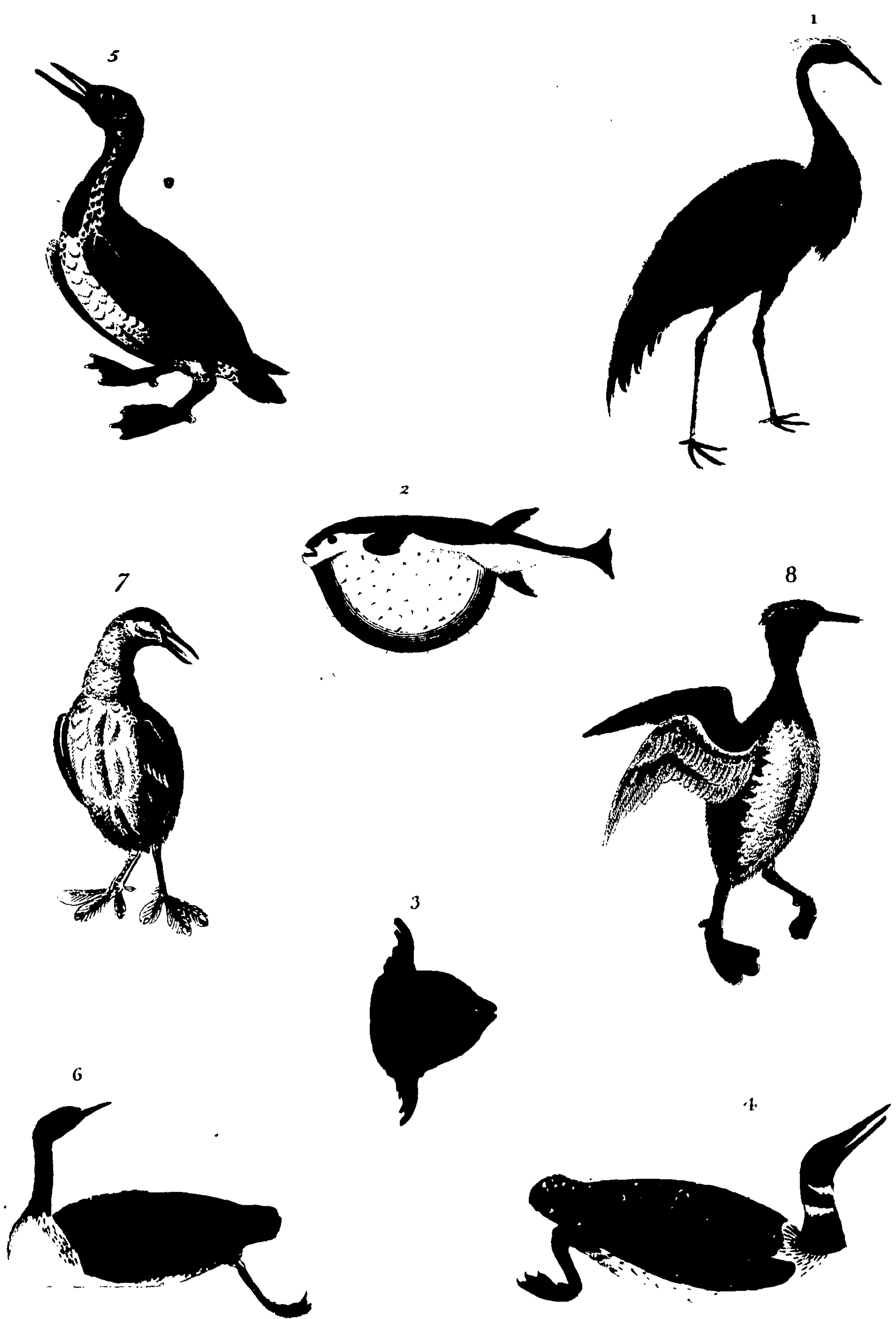
DEER, GREY. This species seems to be very obscure; nor are naturalists agreed whether it is a Deer, a musk, or a female antelope; especially as the animals of this kind mentioned by Linnæus are described as having no horns. It is of a grey colour, and about the size of a cat; a line of black appears between the ears, and a large black spot above the eyes; and there is a line of the same colour on each side of the throat, pointing downwards. The middle of the breast is black; the fore-legs, and the sides of the belly as far as the hams, are marked with black; the ears are long; and the under-side of the tail is black.

DEMOISELLE OF NUMIDIA. This bird receives it's name from it's particular actions in walking, which (by it's frequent leaping and turning round, and varying the motion of it's head at the same time) resemble dancing. According to the Royal Academy at Paris, it measures three feet and a half from the tip of the bill to the end of the feet, when extended; but the ingenious Edwards, who has given a very accurate description of it from the life, says that it appeared to him to exceed the Parisian measure. Considered as a bird of the crane kind, the bill is short, and terminates in a point, the thicker part next the head is greenish, in the middle it gradually becomes yellow, and the point is red; the irides are of a shining red colour; and the head and upper part of the neck are black, except the crown, which is grey. Exactly behind the eye there is a tuft of long, soft, white feathers, tending backwards, and depending behind in a very graceful manner. The fore-part of the neck is covered with soft, long, and slender black feathers, which fall on the breast in a very pleasing form, sometimes close, and at others detached like a lady's handkerchief. The hind-part of the neck, the whole body, the wings, and the tail, are of a blueish ash-colour, except the greater quills, which are dusky, or rather black; and the tips of the tail-feathers are also blackish. The legs are pretty long; the feet are of a moderate size, and entirely covered with dark or blackish scales; the claws are black; and the legs are destitute of feathers a considerable way above the knees.

DENTALE. An Italian fish somewhat resembling the sea-bream, though thicker and longer in proportion to it's size. The head is depressed; the snout is oblong; the back is sharp, and of a dirty yellowish green colour; and, in those which are large, sometimes purplish, sprinkled with bright blue and black spots, which likewise appear on the sides. There is a row of teeth in each jaw, of which four are more conspicuous than the rest, and resemble canine teeth; from which circumstance this fish has received it's name. The eyes are large, and encircled with golden irides. The Dentale is very common in the markets of Venice and Rome, and generally weighs about three or four pounds.

DENTALIA. A genus of univalve shells; which may be defined, simple tubular shells, of a regular, determinate, curved, conical shape, and open at both extremities. The animal is a terebella. The common Dentalium, which is slender, and about an inch and a half long, is found on most parts of the British coasts.

The species in this family are but few; and none of the fossil kinds are different from the recent. The genuine Dentalium, as described by Tournefort, is of a tubular or conical form, about three inches long, of a shining greenish white colour, hollow,



1 DEMOISELLE OF SUMDIA. 2 GLOBE DIODON 3 SHORT DIODON 4 NORTHERN DIVER. 5 PURPLE THROATED DIVER. 6 RED - THROATED DIVER 7 BLACK AND WHITE DABCHICK 8. NORTH AMERICAN HORNED DABCHICK

hollow, light, and longitudinally divided by parallel lines running from top to bottom. It is about the thickness of a quill, and somewhat resembles a dog's tooth.

Dr. Lister, in the Philosophical Transactions, mentions two species of Dentalia; one of which is commonly found about the shores of the isle of Guernsey, being a long, slender, white tube, somewhat bending and tapering, and open at both ends; and the other species, which is properly called entalium, is longer and thicker than the former, and sulcated; whence the Italian term intaglia.

The Dentalium, called also the syringites, taken internally, is used as an alkali in sweetening acids, and in stopping the dysentery and spitting of blood. It is also administered externally as an absorber of moisture.

DENTEX. A fish caught in the Mediterranean seas in great plenty, and common in the Italian markets. See **DENTALE**.

DENTICULI ELEPHANTIS. An appellation given by some authors to the dentale, a shell of the tubulus marinus kind, which bears a distant similitude to an elephant's tusk. See **DENTALIA**.

DEPONA. A Mexican serpent, having a very large head and strong jaws. The mouth is furnished with cutting, crooked teeth; among which there are two longer than the rest, placed in the fore-part of the upper jaw, but essentially different from the fangs of the viper. Round the mouth there is a broad scaly border; the eyes, which are very large, give the creature a formidable appearance; the forehead is covered with large scales, above which there are other smaller ones curiously arranged: the scales are greyish on the back, along which runs a double chain, whose extremities are united in the manner of a buckler. Both sides of the belly are marbled with large square spots of a chestnut colour, and in the middle of each there is a round yellow dot. This serpent flies from the human species, and is seldom known to do any mischief.

DERMESTES. A genus of insects of the order of coleopteræ, the antennæ of which are clavated and perfoliated transversely. There are several species of this class, but they are frequently confounded with the scarabæi, or beetles.

DERMESTES, BLACK. This insect has a white spot on each of the cases of the wings; the body is small, black, and of an oval shape; and the legs and feelers are also black. It frequents houses and old walls; and, when touched, or alarmed by any noise, it draws its head and legs under the shell of the body.

DERMESTES, CYLINDRICAL. This species has a thick hairy neck, and testaceous cases for the wings: these cases are longish, blunt at their points, and of a whitish brown colour; but the body and legs are black. The antennæ, or feelers, are reddish. This insect is not much larger than a louse; and, when molested, it contracts itself, and remains motionless. It is very common in houses.

DEVIL, SEA. A very hideous fish of the ray kind, the flesh of which is reckoned a deadly poison. It is about four feet long, and broad in proportion. On its back there is a kind of bunch, covered with thorns or prickles like those of the hedge-hog; and the skin, which is hard, unequal, rough, and black, rises into various small prominences, between which there are small black eyes. The mouth is extremely wide, and armed with several very sharp teeth, two of which are crooked

like those of the wild boar. It is furnished with four fins, and a broad forked tail; but it receives the name of Sea-Devil from two sharp black horns over the eyes, which bend towards the back.

DEVIL, SEA, OF GUINEA. This fish, which is about twenty-five feet long, and eighteen broad, has four eyes. On each side rises an angular substance of a corneous nature, and very sharp; the tail is extremely long, and terminates in a dangerous point; the back is covered with small excrescences, two inches high, and sharp at the ends; the head is enormously large; the mouth is armed with flat cutting teeth; two of the eyes, which are round and large, are situated near the throat; and the other two are small, and placed over them. On each side of the throat there are three horns of equal lengths, about three feet long, and an inch and a half in diameter; but, being flexible, they are incapable of doing much injury. The flesh is tough and ill-flavoured, and by no means proper for food.

DEW-WORM. A genus of worms having slender annulated bodies, furnished with lateral pores. The common Dew-Worm has an hundred and forty rings; the head is taper; the mouth is round at the extremity; the fore-part of the animal is cylindric, and the rest depressed; at nearly one-third of the length, there is a prominent annulated belt; and a row of minute spines extend on each side of the belly, which assist the creature's motion.

DEW-WORM, LESSER. This worm is a variety of the former, and differs chiefly from it in size. It inhabits the common soil, which it renders apt to receive the rain by its repeated perforations. It feeds on the cotyledons of plants, or part of the vegetating seed, during the day; and at night crawls abroad, and copulates with the female.

Worms of this sort afford no inconsiderable sustenance to moles, hedge-hogs, and various sorts of birds.

DEW-WORM, INTESTINAL. This species lives in the lesser intestines of the human species, particularly those of infants; and does not essentially differ from the other kinds.

DEW-WORM, LUG. This insect has a round mouth; and a circular body annulated with greater and lesser rings, on each of which there are two tufts of short bristles placed opposite. The tail-part is smooth; and very curious ramifications issue from among the tufts in the living worm, which is soft, and full of blood.

This species inhabits sandy shores, where it buries itself deep; but its retreat is easily distinguished by a little prominence, with an aperture on its surface. It is much esteemed as a bait for fish.

DIABE. A prickly sea-fish of the orbis or globe fish kind, exactly resembling the porcupine, except that its spines or prickles are all fixed into its skin by three insertions.

DICROTUS. A term used by the ancients to express the deer or stag when in its third year's growth. By the ancient Greeks, it was called nebus in its first year, puttolea in its second, dicrota in its third, and cerastes ever afterwards.

DIDAPPER, DIPPER, or DOB-CHICK. This bird measures about ten inches in length, and sixteen in breadth; and weighs from six to seven ounces. The head is thick set with feathers, which in old birds are of a bright bay colour on the cheeks, the top of the head, the whole upper side of the body, the neck, and the breast, are a deep brown,

brown, tinged with red; the greater quill-feathers are dusky, and the interior webs of the lesser are white; the belly is cinereous, mixed with a silvery white and a tinge of red; the wings are small; and the legs, which are a dusky green, are placed so far behind, that the bird walks with difficulty, and very seldom attempts to fly: however, it meets with safety in diving; which act it performs with great velocity, and possesses the faculty of remaining a considerable time under water. This fowl, which subsists principally on fish and aquatic plants, forms it's nest on the banks of rivers and lakes in the water, without any fastening, so that it floats in the stream. It lays five or six eggs of a white colour, which the bird always covers after quitting it's habitation. Notwithstanding the rising of the water into the nest keeps the eggs constantly wet, the natural warmth of the animal brings on a fermentation in the vegetables; which being a full foot in thickness, make a comfortably warm bed, that assists the dam in hatching her brood.

DIDELPHIS. The Linnæan name for the animal called by other writers philander. In the above celebrated naturalist's system of zoology, this creature is also a distinct genus of animals of the order of feræ, and class of mammalia; the distinguishing characters of which are, that they have ten upper fore-teeth, and eight lower, the two intermediate ones being very short; that the lanarii are long, and the molares denticulated; and that they have also a small bag or pouch under the belly. See OROSSUM.

DIEBEL. An appellation given by Kentman and others to the capito or chub. It is properly a species of the cyprinus. See CAPITO and CYPRINUS.

DIODON. A very curious genus of fishes, having a very deep body, which appears as if amputated in the middle. The mouth is small; and there are only two teeth in each jaw. Rondoletius has given this class of fishes the synonym of orthogoriscus, probably considering it as the same which Pliny intended by that name; but the account left by that naturalist is so short, that it is difficult to determine to what fish it is to be referred.

DIODON, OBLONG. This species, called also the sun-fish, grows to a vast size. That described by Salvian weighed upwards of one hundred pounds; and Dr. Borlase mentions one caught at Plymouth in 1734, which was five hundred weight. The Oblong Diodon, in shape, bears some resemblance to the bream, or to some deep fish cut off in the middle. The mouth, which is very small, contains only two broad teeth in each jaw, having sharp edges; the eyes are small, and before each there is a small semilunar aperture; the pectoral fins are very minute; the dorsal and anal fins are elevated, and placed at the extremity of the body; and the tail, which is narrow, fills all the abrupt space between those two fins. The back is dusky, and mottled; the belly is silvery; and between the eyes and the pectoral fins there are certain streaks which point downwards. The skin, which is destitute of scales, when boiled, turns to a glutinous jelly resembling cold boiled starch; and, on being applied to paper or leather, answers all the purposes of glue. This creature lives on shell-fish; and it's flesh is so unusually rank, as to be totally unfit for food.

DIODON, SHORT. This species differs from the former in the shortness and deepness of it's body; in the back and anal fins being higher; and in the aperture to the gills not being semilunar, but oval.

It was caught off Penzance, and is mentioned by Dr. Borlase in his Natural History of Cornwall. However; though it is sometimes found on the western coasts of this kingdom, it is more frequently so in the warmer climates of Europe.

DIODON, GLOBE. The length of this fish is about one foot seven inches; and the whole circumference, when distended, is two feet six. The form of the body is usually oblong; but when the creature is alarmed, it possesses the power of inflating it's belly to a globular shape of great size. Nature seems to have endued the Globe Diodon with this property as a defence against fish of prey, as they are thereby prevented from laying hold of it with facility, and are likewise terrified by the vast numbers of spines with which that part is armed, and which it is capable of erecting at pleasure. The mouth is small; the irides are white, tinged with red; and the back, from the head to the tail, is almost straight, and of a rich blue colour. The dorsal fin is placed low on the back, the anal being opposite; the tail is nearly divided by an angular projection in the middle; and there are no ventral fins. The tail and fins are brown; and the belly and sides are white, corrugated, and beset with an infinite number of small sharp spines adhering to the skin by four processes.

This species is common to Europe and America; but only one single specimen has been discovered in our seas, and that near Penzance in Cornwall.

DIOMEDE BIRD. A fowl of the web-footed kind; having a slender beak, hooked at the end; and it's hinder toe being unconnected with the membrane which unites the rest. It is of the size of the common hen, but it's neck and legs are much longer. It's colour is dusky, and somewhat brownish; and under the belly there is a small portion of white. The beak is a fine red; and in some yellowish, with a black tip. It is found in the Insula Diomedea, now called Tremiti, in the Adriatic Sea; and is said to be peculiar to that island.

DIOMEDIA. The Diomedea, in the Linnæan system, forms a genus of anseres, with a straight bill; the upper mandible being hooked at the extremity, and the lower truncated. It includes the albatross and Magellanic goose.

DIPPER. A genus of shells of a suboval figure, smooth, furnished with an oblong aperture, and having one end a little convoluted. The inclosed animal is a slug. See BULLA.

DIPSAS. A species of serpent, the bite of which is of so malignant a nature, as to produce a mortal thirst; from which circumstance this reptile has received it's name. It is found in Africa, and some other countries.

DIPTERA. An order of insects having only two wings; under each of which there is a style or oblong body, terminated by a protuberance or head called a balancer. The appellation is derived from Dis, Two; and Pteron, a Wing.

DISCOIDES FIBULA. A genus of the echinodermata, or sea hedge-hogs; the periphery of the base of which is exactly round, and the body of a convexo-concave figure. The principal species of this genus is the subuculus; which has sometimes a rosaceous top, the lines being very neat and elegant; at other times, a plain and smooth top; sometimes it is entirely covered with very minute and small striæ; and sometimes it is much more depressed than at others.

DIVER.

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DIVER. A genus of aquatic birds; the characters of which are these: the bill is narrow, straight, and sharp; the upper mandible is longest, the edges of each bending inwards; the nostrils are linear; the head is small; the tongue is pointed, long, and serrated near the base; the wings are short; the feet are placed far backwards on the body, and near the tail, which is short, and consists of twenty feathers; the legs are broad and flattened; and the claws are wide and depressed. Of this fowl there are several species.

DIVER, NORTHERN. This bird measures about three feet and a half in length, and four feet eight inches in breadth. The bill is black and strong, and to the corners of the mouth is four inches in length; the head and neck are a deep black, the hind-part of the latter being streaked with a large white band shaped like a crescent; exactly under the throat there is another band; and both are marked with black oblong strokes pointing downwards. The lower part of the neck is a deep black, tinged with a rich purple gloss; the under-side of the body is wholly white; the sides of the breast are marked with black lines; and the back, the coverts of the wings, and the scapulars, are black, marked with white spots. The tail is very short, and almost hid by the scapulars, which are dusky spotted with white; and the legs and toes are black.

These birds, which inhabit the northern parts of this island, keep chiefly at sea, and feed on fish; but naturalists are not agreed that they breed in this kingdom, which they are known to do in Norway, where there are many birds common to Scotland.

DIVER, IMMER, OF LINNÆUS. This bird, which inhabits the seas about the Orkneys, in very severe winters migrates to the more southern parts of Britain. It lives so uniformly at sea, that some believe it never quits the water, and that it hatches it's young in an aperture formed by nature under it's wing for that purpose. With respect to size, it is larger than the goose; the head is dusky; and the back, the coverts of the wings, and the tail, are clouded with lighter and darker shades of the same colour. The primaries of the tail, as well as the legs, are black; and the breast and belly are silvery. The skin of this bird is so unusually tough, that it has been used instead of leather in some of the northern regions.

DIVER, SPECKLED. This fowl measures twenty-seven inches in length, and it's breadth is three feet nine inches; the bill is three inches, and turns a little upwards; and the mandibles, when closed at the points, do not meet at their sides. The head is a dusky grey, marked with numerous white spots; the hind-part of the neck is an uniform grey; the whole upper part of the body, and the greater coverts of the wings, are dusky, speckled with white; and the lesser coverts are dusky and plain. The tail is composed of nearly twenty feathers, which in some are tipped with white; the cheeks, and the whole under-side of the body, are a fine glossy white; and the legs are dusky.

Birds of this species frequent the European seas, lakes, and rivers, during the winter season; and, near the Thames, they are called sprat loons, because they attend these fish during their continuance in that river.

DIVER, RED-THROATED. This bird breeds on the margins of lakes, in the northern parts of Scotland, where it lays two eggs. It weighs about three pounds; it's length is two feet, and it's breadth three feet five inches. The head, which

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is small and taper, is of a fine uniform grey colour; the chin is of the same hue; the bill is straight; the hind-part of the neck is marked with dusky and white lines pointing downwards; the throat is a dull red; the whole upper part of the body, the tail, and the wings, are a deep dusky grey; the under-side of the body is white; and the legs are dusky.

DIVER, PURPLE-THROATED. This species is about the size of the tame duck; the bill is black; the front is of the same colour; the hind-part of the head and neck are cinereous; the sides of the neck are marked with black and white lines pointing downwards; and the fore-part is of a glossy variable purple, black and green. The back, the scapulars, and the coverts of the wings, are black, the two former being marked with square, and the latter with round white spots; the quill-feathers are dusky; the breast and belly are white; the tail is short and black; and the legs are partly dusky and partly reddish.

DIVER, NEWFOUNDLAND, OR LOON. The expansion of the wings of this very large species measures four feet; the bill, which is black and sharp, is near five inches long, and terminates in a white point; the head and neck are a dusky brown; there is a white spot under the bill; and a circle of the same colour surrounds the neck, below which it is greenish. The primaries are black, except the exterior edges, which are white; the breast and belly are nearly of the same colour; the covert-feathers of the wings and back are irregularly spotted with white; the exterior toe is near five inches long; and the feet are webbed, in common with all the genus.

DOB-CHICK, or DIDAPPER. An aquatic fowl of the diver kind, known among authors by the name of *colymbus minor*, and called by Linnæus *colymbus auritus*. It seldom exceeds six ounces in weight; the beak is short, large at the base, and tapering to the point; the eyes are large; and the wings are small. This bird, which is not furnished with a tail, is covered with a thick downy plumage, of a very deep blackish brown on the back, but white on the belly.

The Dob-Chick is of such a structure that it moves with more facility under the water than on it's surface. It raises itself from that element with great difficulty; but, when it has once gained the air, it is capable of continuing it's flight for a considerable time. It forms it's nest, near the banks of lakes or rivers, of vegetables; the fermentation of which, occasioned by the natural warmth of the bird, hatches the eggs, even though the water invades the nest, and thereby keeps them in a constant state of humidity.

DOB-CHICK, BLACK AND WHITE. This species is about the size of the teal. The bill is straight, sharp at the point, and of a black colour, except the edges of the upper mandible, and the root or basis of the lower, which are red. The circle round the eye is a bright red; a bare skin, of a fine deep red colour, passes from the side of the upper bill to the eye; and above this skin, on each side, there is a white spot. The top of the head is black, with a greenish gloss; the upper side of the neck, the back, the rump, and the wings, are a pretty deep black; but the latter are edged with white about the ridges or joints; and the tips of the middle quills, which are white, form a transverse bar. The covert-feathers on the inner sides of the wings are white; the under-sides of the head

DOB

and neck are white, as well as the sides and belly, except that some black spots appear near the insertions of the legs, which are placed at the extremity of the body; and, together with the feet, are of a purplish flesh-colour internally, and a dirty green externally. The toes, which are four in number, are all disjoined; but they have lateral fins on each side, and broad flat claws resembling the nails of the human species. The hind-parts of the legs are ferrated; and the toes are so formed with their webs, as to shut in the manner of a fan, that they may be drawn with more facility through the water, and opened again whenever the creature strikes. This bird has not the least appearance of a tail.

DOB-CHICK, EARED. This bird has a straight, sharp-pointed bill, of a black colour, except the tip of the lower mandible, which is whitish; the irides are red; and from behind the eyes, on each side, proceeds a tuft of long loose feathers of a reddish yellow colour, which either falls on the sides of the neck, or flows backward, according to the motion of the bird. The head and neck are black; the whole upper side is a blackish brown, except a little white about the joints and tips of the middle quills; the breast, belly, and inner coverts of the wings, are white; where the colours of the upper and lower parts of the body are blended, a line of a yellow reddish colour extends the whole length of the bird; and the legs and feet are of a dirty green hue.

DOB-CHICK, HORNED NORTH AMERICAN. This species, which is of the size of the teal, has small wings, and large legs and feet in proportion to its body. The bill is an inch and a quarter long, sharp-pointed, and white at the tip; and the nostrils are placed in furrows. From the corner of the mouth to the eye there is a bare skin of a red colour; the head is covered with long black feathers of a shining green gloss; behind the head runs a line of long loose yellowish orange feathers, which hang a little downward, and form a kind of crest; the hinder part of the back and neck are of a blackish brown hue; and the fore-part of the neck and beginning of the breast are a reddish orange, which turns a little white on the breast. The whole belly is a glossy white, with an admixture of dirty orange; the legs, which are flat and broad, are placed at the extremity of the body; the thighs are so confined within the skin, that they cannot be moved backwards and forwards; and the toes, which have stiff webs, are furnished with nails like those on the fingers of a man. This bird, which seems to be destitute of a tail, was brought from Hudson's Bay.

DOB-CHICK, GREATER. This bird inhabits the Lake of Geneva; though, if we may credit the ingenious Edwards, it has sometimes been seen in England also. The bill is flesh-coloured, and dusky at the tip; the top of the head, a mark on the side of the neck, and a line between the bill and the eye, are black; the hinder part of the neck, the back, rump, and upper sides of the wings, are cinereous, except that there is a border of white in the middle of the wing, and that the middle quills are white; and the insides of the wings are white, the quills being of a light ash-colour. The under-side of this bird, from the throat to the extremity of the body, is covered with fine white feathers of a fatten or silvery gloss; the legs and feet are a dusky green; and, like all the rest of the genus, this bird is destitute of a tail. The toes are not

DOD

webbed together, but have firm lateral membranes of a tolerable breadth extended on their sides; the nails are flat; and the entire construction of the legs seems perfectly adapted for the aquatic life of the animal. This species is about the size of the common duck.

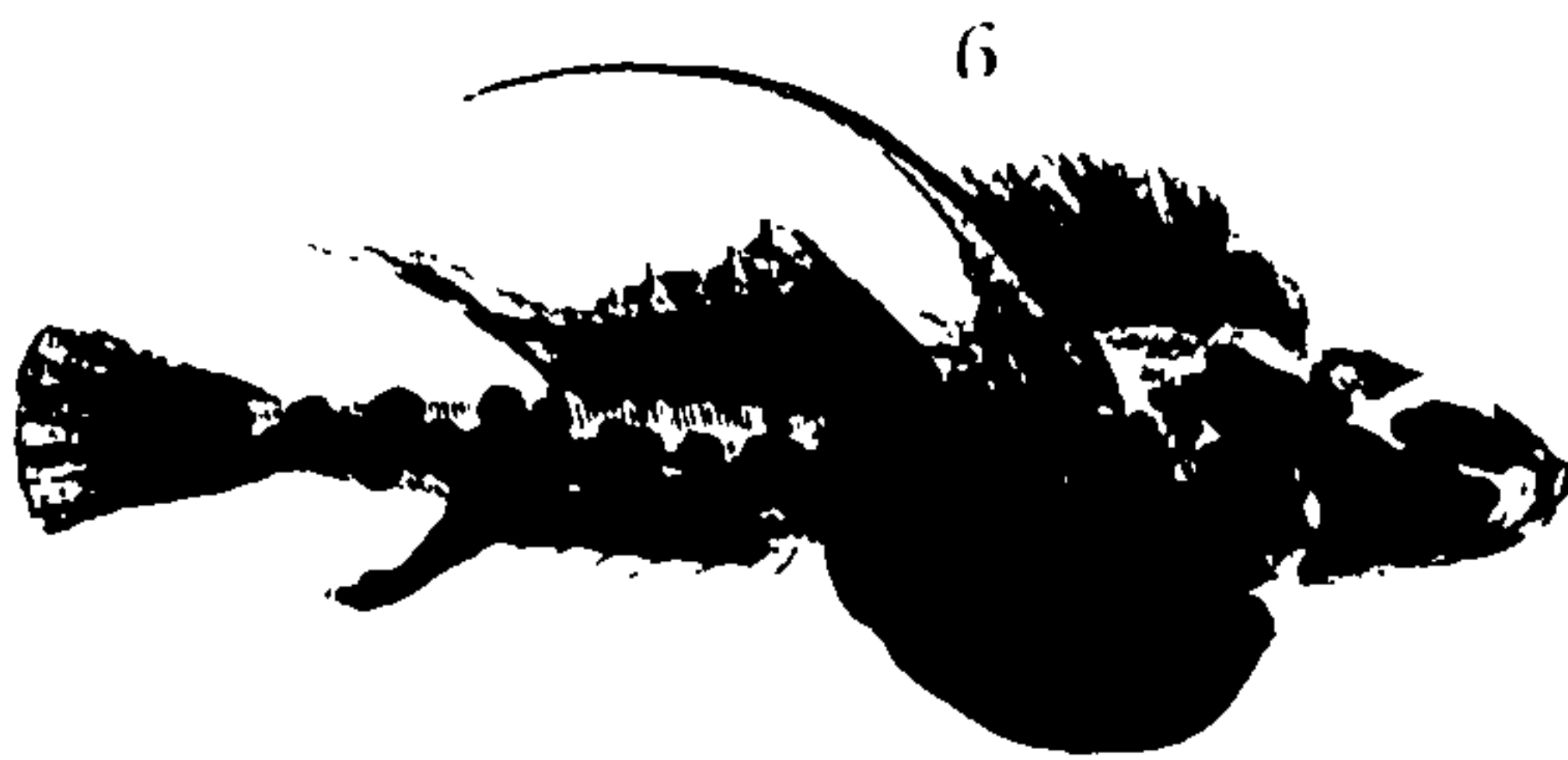
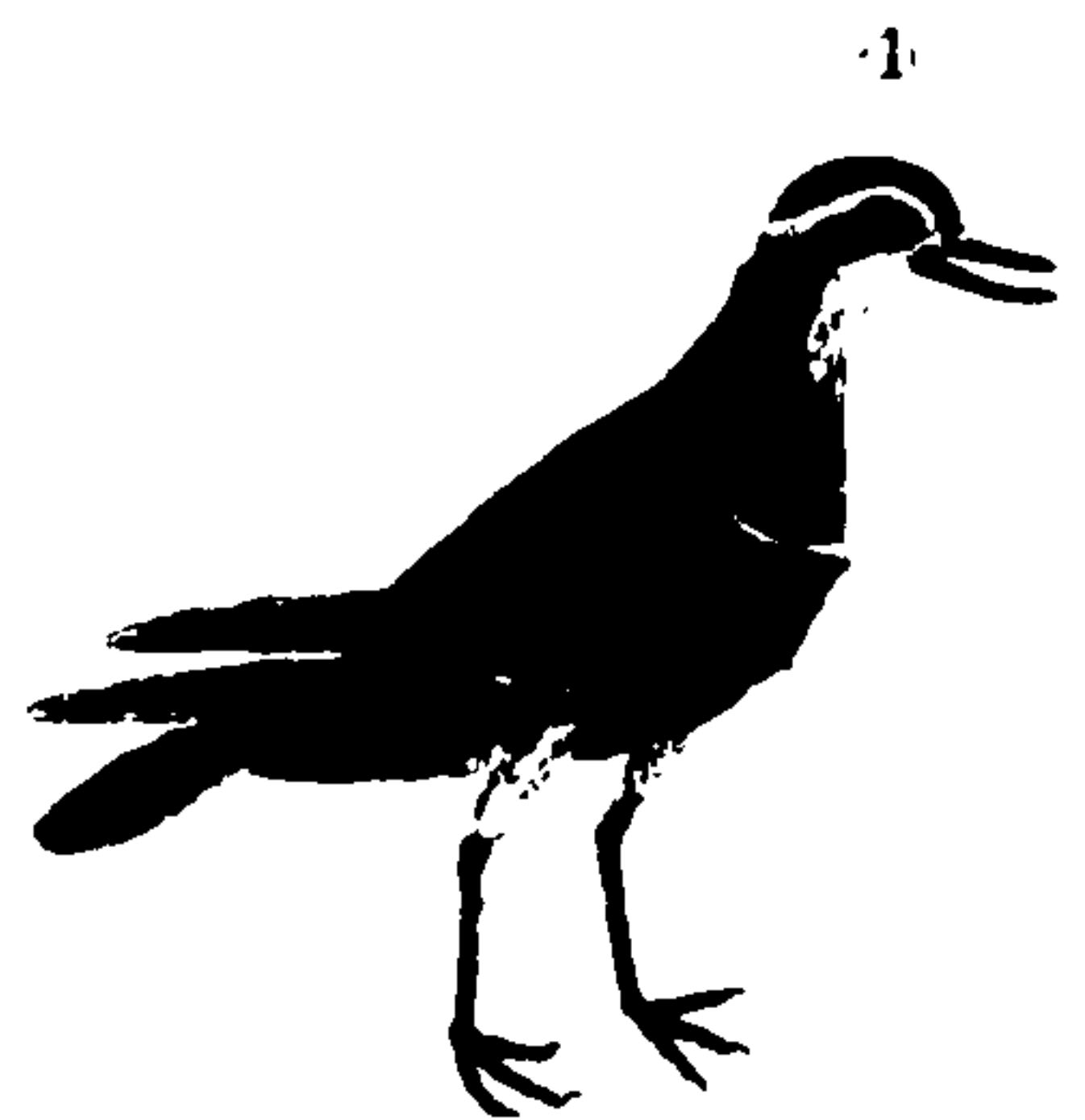
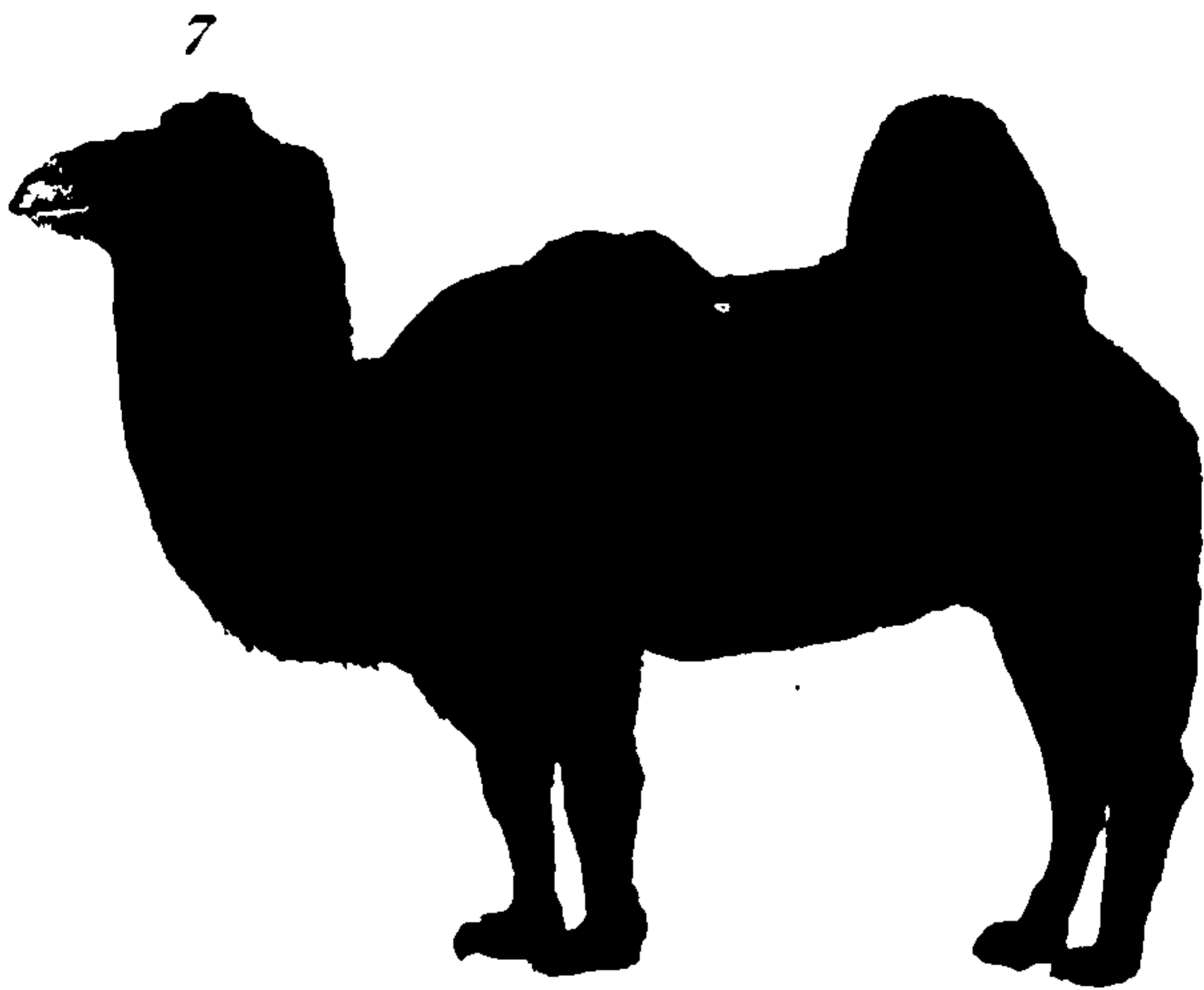
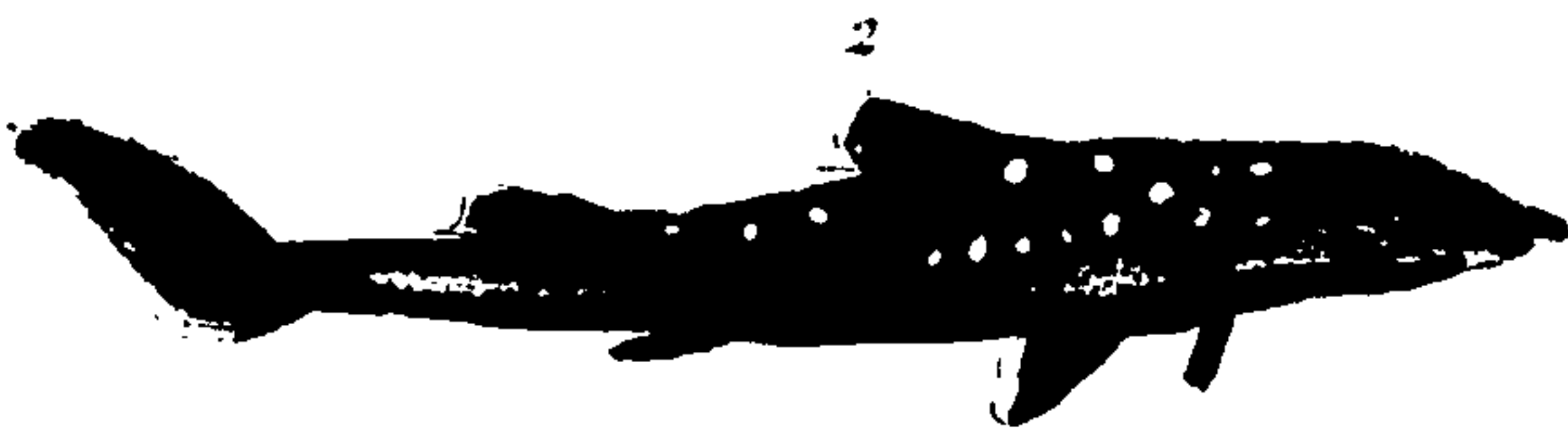
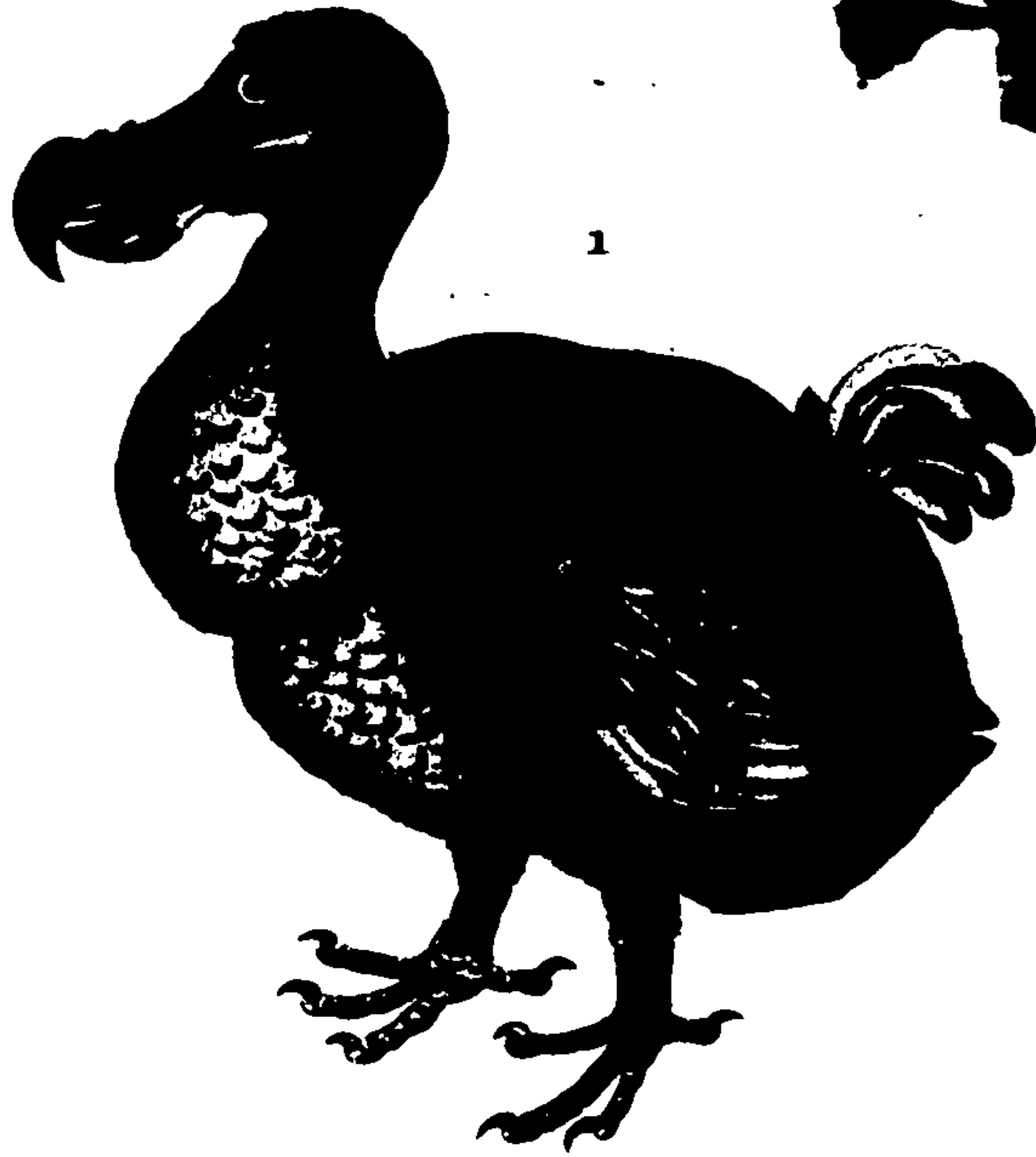
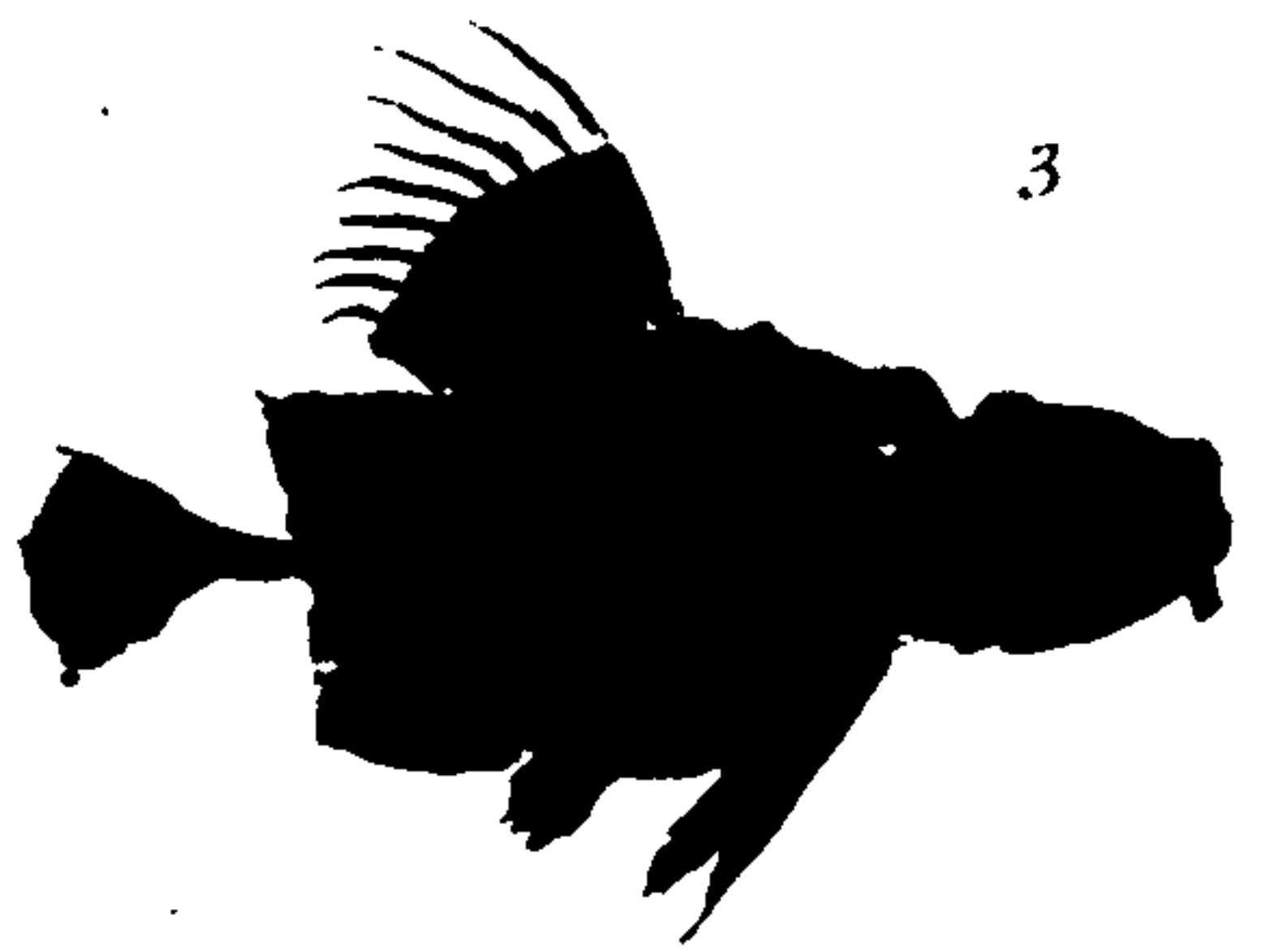
DOBULA. An appellation given by some naturalists to the chub. It has been called *capito* and *cephalus* by the moderns, and *squalus* by the ancients; but it seems to require no genuine name, being properly only a species of *cyprinus*. See *CYPRINUS*.

Dobula is also a term expressive of a fresh-water fish of the leuciscus or dace kind; but it is larger, thinner, and better tasted. It is caught in the fresh-water lakes of Germany, and in those of some other countries.

DODO. A very large and curious bird, called by some authors *cygnus cucullatus*; by others, *gallus gallinaceus peregrinus*; and, by Bontius, *dronte*. Its appearance, instead of exciting an idea of swiftness, the common attribute of birds in general, seems to strike the imagination as something the most unwieldy and inactive in nature; its body, which is massive, almost round, and covered in general with grey feathers, is barely supported on two thick legs like pillars, while its head and neck rise from it in a manner truly grotesque. The neck, thick and purfy in itself, is joined to a head composed of two great chaps, opening far behind the eyes, which are large, black, and prominent; so that the animal, in gaping, exhibits to view a most enormous mouth: hence the bill is of an extraordinary length, thick, sharp at the end, and having each chap crooked in opposite directions; and the two mandibles, which are of a blueish white colour, in some measure resemble two spoons laid back to back. The result of all which combined circumstances is a stupid and voracious physiognomy, still farther heightened by a bordering of feathers round the root of the beak, which bears some resemblance to a hood or cowl, and finishes this unmeaning picture of deformity. Magnitude, which in other animals implies strength, in this only contributes to inactivity. The Dodo seems to be so weighed down by its own gravity, as scarcely to possess strength sufficient to give energy to its motions; and it appears among the feathered tribe, what the sloth does among quadrupeds, an unresisting creature, equally incapable of flight or defence. Its wings are covered with soft ash-coloured feathers, intermixed with a yellowish white, but they are too short to render it any essential service in flying; its tail, which is composed of a few small curled feathers of a whitish colour, is disproportionate and misplaced; its legs are too short to assist it in running; and its body is exceedingly clumsy. In short, this animal does not inaptly convey an idea of the tortoise dressed up in the feathers of a bird; and, though thus furnished with the means of flying, seems only still the more unwieldy.

The Dodo is a native of the Isle of France; and the Dutch, who first discovered it there, are said to have termed it the nauseous bird, as well from its disgusting figure, as from the disagreeable taste of its flesh: however, succeeding observers contradict this report, and assert that its flesh is good and wholesome food. Being a very simple and sluggish bird, as is pretty obvious from its figure, it consequently becomes an easy prey to the fowler.

Naturalists seem to be divided in their opinions, whether



1 DODO 2 DOG - FISH 3 DOREE 4 DOTTEREL 5 DRAGON - FLY 6 DRAGONET
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DOG

whether this bird, and that described by some authors under the appellation of the bird of Nazareth, are one and the same. They are unquestionably both natives of the same country; they are equally incapable of flight; and the form of the wings and body in both are similar. Nevertheless, they differ very essentially; for the plumage of the bird of Nazareth is described as being exceedingly beautiful; and its legs are delineated as being much longer than those of the Dodo.

DOG. A large genus of quadrupeds, furnished with six cutting teeth, and two canine ones in each jaw; having five toes before, and four behind; and the tail bending towards the left, the usual characteristic of the entire genus, and first discovered by Linnæus. These carnivorous quadrupeds are neither so numerous, powerful, treacherous, rapacious, nor cowardly, as those of the cat kind, which they seem to follow in the chain of nature. They may be distinguished by their claws, which have no sheaths, as in the feline tribe. The nose and the jaws of the Dog are also longer than those of the cat; and the body is more strongly made in proportion, and covered with hair instead of fur. If we compare the natural habitudes of these two classes of animals, we shall find that the Dog kinds are not so solitary as those of the cat, but delight to hunt in company, and to encourage each other by their mutual cries. In this manner the Dog and the jackall pursue their prey; and the wolf and the fox, though more solitary and shy in populous countries, in regions where they are less persecuted, and can display their natural propensities without fear, they are observed to keep together in packs, and pursue their game with alternate howlings. Though inferior to animals of the cat kind in the faculty of climbing, they infinitely exceed them in the sense of smelling, by which alone they can pursue their prey with certainty of success, wind it through all its mazes, and tire it out by perseverance. It often happens, however, in their savage state, that their prey is either too much diminished, or that the animals of which it consists are too wary, to afford a sufficient supply: in which cases all the Dog kinds can subsist for a considerable time on fruits and vegetables.

Of all the canine tribe, the Dog claims the preference, being the most intelligent of all known quadrupeds, and the acknowledged friend of mankind. Independent of the beauty of his form, his vivacity, force, and swiftness, he is possessed of all those native qualities which generally conciliate the affections of the human species. A natural courage and ferocious disposition render the Dog in his savage state a formidable enemy to all other animals; but these qualities speedily yield to very different ones in the domestic Dog, whose only ambition seems to be the desire of pleasing: he approaches with a timid respect, and lays his strength, his courage, and all his useful talents, at the feet of his master; he waits his orders, to which he renders implicit obedience; he consults his looks, and a single glance is sufficient to put him in motion. He is faithful beyond any example to be found among the human race; he is constant in his affections, friendly without interest, and grateful for the slightest favours; he retains the sense of benefits conferred longer than that of injuries received; he is not disgusted by a slight degree of harshness, but continues humble, submissive, and suppliant, under his owner's displeasure: his ultimate wish is that of being serviceable, his only fear that of

DOG

displeasing; he licks the hand that has just been lifted up to strike him; and eventually disarms resentment by unwearied submission.

History, says Pope, is more replete with examples of the fidelity of Dogs than of friends; and indeed an attentive observance of these animals might afford instructive lessons of rectitude, patience, forbearance, and fidelity, even to the reputed lords of the creation. More docile than the human species, as well as more obedient than any other animal, the Dog not only receives instruction in a very short time, but also conforms to the dispositions and manners of those who command him; and his behaviour is modified after that of the family where he lives. Always assiduous in the service of his master, he is ever a friend to his friends, but indifferent towards others, setting himself openly against such as are dependent like himself. He forbids the approach of a beggar, whom he discovers to be such either by his cloaths, his voice, or his gesture. When the care of the house is committed to him, he seems ambitious of the charge; continuing a faithful centinel, going his rounds, scenting strangers at a distance, and giving every indication in his power that he is intent on his duty. If any person attempts to intrude on his territories, he becomes unusually fierce, threatens, flies at him, fights, and either conquers alone, or alarms those for whom he contends.

From hence we may see of how great importance this animal is to us in a state of nature. Had the species never existed, how could man, without the assistance of the Dog, have been able to conquer, tame, and reduce to servitude, every other animal? and how could he have discovered, chased, and destroyed, those creatures which were noxious to him? In order to his security, and to constitute him the undoubted lord of animated nature, it was necessary for him to begin with conciliating the favour of a part of them; and to attach such to himself, by kindnesses and caresses, as seemed fittest for obedience and assistance. Thus the first art exerted by man consisted in securing the favour of the Dog; and the result of this art was the conquest and entire possession of the earth. Animals are in general endowed with more strength, agility, and fleetness, than the human species; and their senses (particularly that of smelling) are far more perfect. Having gained therefore a new assistant in the Dog, whose scent is so exquisite, man as it were gained a new faculty, of which he was before entirely destitute.

The Dog, thus useful in himself, being admitted to a participation of empire, exerts a degree of superiority over all other animals which stand in need of human protection. The flocks and herds obey his voice more readily even than that of the shepherd or the herdsman; he conducts them, guards them, confines them within their appointed limits, and considers their enemies as his own. Nor are his arts less serviceable in pursuit: when the sound of the horn, or the voice of the huntsman, calls him to the field, he testifies his pleasure by every little emotion; and pursues with perseverance those animals from which, when captured, he has no expectancy of reaping the smallest advantage.

All carnivorous animals naturally delight in hunting. The lion and the tiger, whose power is so great as generally to ensure conquest, hunt alone, and without any regular design; but the wolf, the Dog, and the fox, pursue in companies, assist each other, and participate in the spoils. However,

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DOG

when culture has perfected this quality in the domestic Dog; when he has been taught to repress his ardour, to measure his motions, and not to exhaust his strength by too sudden exertions, he then hunts with method and success.

Though the wild Dog, with all his natural propensities and habits, is at present utterly unknown, no such animal being now found in any part of the world, there are many Dogs which, from a domestic state, have become savage, and wholly pursued the dictates of nature. In those deserted and uncultivated regions where Dogs are found wild, they seem to be strongly tinged with the disposition of the wolf; they unite in large bodies, and attack the most formidable enemies of the forest, such as the cougar, the panther, and the bison. In the continent of America, where they were originally introduced from Europe, and abandoned by their masters, they have multiplied to such a degree, that they are disseminated in packs over the whole country, indiscriminately attacking all other animals, and frequently even man himself: and there they meet with the common fate of carnivorous animals, being killed wherever they happen to make their appearance. Yet, notwithstanding their natural wildness, they are easily reclaimed; and, when treated with kindness and lenity, they quickly become submissive, familiar, and faithful in their attachments. In this respect, they totally differ from the wolf or the fox; which animals, though taken ever so young, are gentle only while cubs; for, when advanced in age, they always betake themselves to their natural appetites of rapine and cruelty. In a word, it may with truth be asserted, that the Dog is the only animal whose fidelity is not to be shaken; which knows his master and his friends; which instantly distinguishes strangers; which observes his name, and answers to the call; which seems to understand the nature of subordination, and solicits assistance; which testifies his regret for the loss of his master by complaint; which, when carried to any distant situation, can find his way home; whose native talents are evident, and whose education never proves fruitless when attentively cultivated.

As the Dog is of the most complying disposition, so also he is the most susceptible in the change of his form, the varieties of this animal being too numerous even for the most attentive describer to enumerate. The climate, the food, and the education, all make strong impressions on him, and produce alterations in his shape, colour, hair, size, and almost every thing except his nature. The same Dog, when transported from one climate to another, seems to become quite a different animal; but distinct breeds are almost as much separated, in appearance, as any two animals the most dissimilar in nature. Nothing appears to continue immutable with them, except their internal conformation: different in the figures of their bodies, the length of their noses, the shape of their heads, the extent and direction of their ears and tails, the colour, quality and quantity of their hair, the natural marks only remain unaltered by which the species is distinguished, and kept distinct from all other animals. It is this peculiar conformation, this faculty of producing an animal that can reproduce, which marks the kind, and approximates forms which at first sight appear as if never intended for alliance.

From this single consideration, therefore, all the various species of Dogs may be pronounced of the

DOG

same kind; but which of them is the original of all the rest, and which the parent stock from whence such a variety of descendants is derived, is a question which the ablest naturalist cannot solve with any degree of certainty.

It may be easily observed, that all animals which are under the influence of man are liable to great variations. Those which have been sufficiently independent to chuse their own climate and nourishment, and to pursue their own propensities, preserve the original marks of nature, without much deviation; and it is probable that the first of these is, even after such a lapse of ages, well represented in their descendants. But those which have been adopted by man, transported from one climate to another, and controuled in their manner of living, have also been changed in their forms: and the Dog in particular has felt those alterations more strongly than any other domestic animal; for, living more like man, he may be said to live more irregularly also; and consequently must have felt all those changes which such variety would naturally produce.

Various other causes may also be assigned for this variety in the species of the Dog: as he is perpetually under the eye of his master, where accident has produced any singularity in it's productions, man uses all his arts to continue this peculiarity unchanged; either by breeding from such as had those singularities, or by destroying those which happened to be destitute of them. Besides, as the Dog produces much more frequently than some other animals, and lives a shorter time, so the chances for it's varieties present themselves more frequently.

If the internal structure of Dogs of different sorts be compared with each other, it will be found that, except in size, they are in this respect exactly the same. This, therefore, affords no criterion by which to judge of the original animal. If other creatures be compared with the internal conformation of the Dog, the wolf and the fox will be found to have the most perfect resemblance: it is probable therefore that the Dog, which most nearly resembles the wolf, or the fox externally, is the original animal of it's kind; for it is reasonable to conjecture, that as the Dog most nearly resembles them internally, so he may approximate them also in external similitude, except where either art or accident has altered his form. This position being allowed, if we advert to the number of varieties which are to be found in the Dog, that species called the shepherd's Dog will bear the strongest resemblance to the wolf or fox. Hence this seems to be the primitive animal of it's kind; and we shall be more confirmed in that opinion, if we attend to the different characters which climate produces in this animal, and the different races of Dogs which are propagated in every country. If we examine those regions which are either in a savage state, or but half civilized, where it is most probable that the Dog, like his master, has received but few impressions from art, we shall find the shepherd's Dog, or a similar animal, still existing. Such Dogs as have run wild in America and Congo, approach this form. Those of Siberia, Lapland, Iceland, the Cape of Good Hope, Madagascar, Madeira, Calicut, Malabar, and Kamtschatka, have all long noses and pricked ears, and seem nearly allied to the shepherd's Dog. That of Guinea quickly assumes this appearance; for, at the second or third generation, the animal forgets

DOG

to bark; his ears and tail become pointed; and his hair drops off, while a coarser and thinner kind supplies its place. This sort of Dog is also found in great abundance in the temperate climates; particularly among those nations who, preferring utility to beauty, employ an animal which requires very little culture in order to its being serviceable. Notwithstanding this creature's deformity, as well as his melancholy and savage air, he is superior to all the rest of the kind in instinct; and, without the smallest instruction, naturally tends the flocks with an assiduity and vigilance at once pleasing and astonishing.

In the more polished and civilized countries, the Dog seems to partake of the universal refinement; and, like the natives, becomes more beautiful and majestic, as well as more capable of imbibing an education foreign to his nature. The Dogs of Denmark, Greece, and Ireland, are larger and stronger than those of any other country. In France, Germany, Spain, and Italy, these animals, like the inhabitants, are of various kinds; and this variety seems to originate from crossing the breed of such as are imported from foreign climates. We may therefore consider the shepherd's Dog as the primitive stock from whence all those varieties are derived, especially as he forms the stem of that genealogical tree which has been branched out into every part of the globe.

This animal, when among the inhabitants of the temperate climates, continues nearly in his original state; but, when transported into more frigid regions, he grows diminutive and ugly: though in Iceland, Russia, and Siberia, where the climate is less rigorous than in Greenland, and where the people are more civilized, he arrives at a more perfect state. Whatever differences there may be among the Dogs of those climates, they are not so considerable as to alter the general features of the species: they have all straight ears, long thick hair, and a savage aspect; and they bark less frequently than those of the more cultivated kinds.

The shepherd's Dog, if transported into the temperate climates of England, France, and Germany, whose inhabitants are wholly civilized, will speedily be divested of his savage air, his pricked ears, and his rough, long, and thick hair; and, from the single influence of climate or food alone, will become either a *matin*, a *mastiff*, or a hound. These three seem to be the immediate descendants of the former; and from them the other varieties are derived.

The hound, the harrier, and the beagle, appear to be all of the same class; for though the female is covered but by one of them, her puppies bear some resemblance to all the three. If this animal be transported into Spain or Barbary, where the hair of all quadrupeds assumes a soft and long texture, it will there be converted into the land-spaniel and the water-spaniel, and these of different magnitudes. If the grey *matin*-hound, which composes the second branch, be transported to the north, it will there become the great Danish Dog; which last, if removed into southern climates, will be converted into the greyhound, of various sizes; and the same, if transported into the Ukraine, Tartary, Epirus, Albania, and Ireland, will become the great wolf Dog, so famous for its spirit and size. If the *mastiff*, which constitutes the third branch, and is chiefly a native of England, be removed to Denmark, it will there be changed into the little Danish Dog; which last, if sent into the tropical cli-

DOG

mates, will be turned into the animal called the Turkish Dog without hair.

All the above races, together with their varieties, are produced by the influence of the climate, joined to the different food, culture, and protection, which they meet with among mankind; but all other kinds may be considered as mongrel generations, produced by the concurrence of these, and originating rather from crossing the breed than attending to the individual. These varieties being extremely numerous, and very different in distinct countries, it would be endless to enumerate them all: besides, nothing but experience can ascertain the reality of the conjectures already made, though they have so much the appearance of probability.

The varieties of Dogs in Great Britain are very numerous; which must naturally be the case in all countries where commerce is extensive, and where wealth is apt to beget capricious predilection. In this island the ugliest, as well as the most useless of their kinds, are adopted merely on account of their singularity; and, being imported for no other purpose than to be looked at, they soon lose even that small degree of sagacity which they possessed in their natural climates. From this importation of foreign useless Dogs, the native breed of this country is much degenerated; and the varieties now to be found are much more numerous than they were in the reign of Queen Elizabeth, when Doctor Caius attempted their natural history: some of those described by him no longer exist; though many have been since introduced, neither so serviceable nor so beautiful as those which have since that period been suffered to decay.

The above naturalist divides the whole race of Dogs into three sorts. The first, being the generous kind, consists of the *tarrier*, the *harrier*, the *blood-hound*, the *gaze-hound*, the *grey-hound*, the *leymner*, and the *trembler*, employed in hunting; the *spaniel*, the *setter*, and the *water-spaniel* or *finder*, used in fowling; the *spaniel*, and the *gentle* or *lap-dog*, for amusement. The second sort, composed of the *farm* kind, consists of the *shepherd's Dog* and the *mastiff*. And the third, being the *mongrel* kind, consists of the *wappe*, the *turnspit*, and the *dancer*. To which varieties may now be added the *bull-dog*, the *Dutch mastiff*, the *harlequin*, the *pointer*, and the *Dane*; together with a variety of *lap-dogs*, which being useless animals, are of course unworthy of particular appellations.

The English *bull-dog* is perhaps the most courageous of the kind; but all his boasted exploits fall infinitely short of those recorded by Pliny of the Epirotic Dogs, or by Aelian of the Indian ones. The latter of these authors has furnished us with the following description of a combat between a Dog and a lion; which, we apprehend, will not prove either useless or unentertaining to our readers.

When Alexander was prosecuting his conquests in India, a grandee of that country was desirous of shewing him the value of the Dogs which were there produced. Bringing his Dog into the king's presence, he ordered a stag to be let loose before him; which the Dog despising as an unworthy enemy, remained quite regardless of the animal, and never once stirred from his place. His master then ordered a wild bear to be let out; but the Dog seemed to think even this a despicable foe, and remained calm and regardless as before. He was next tried with a bear: but still contemning

DOG

his enemy, he waited for an object more worthy of his courage and his strength. At last a tremendous lion was produced; and then the Dog acknowledged his antagonist, and prepared for the combat. He instantly discovered a degree of ungovernable fury, seized him by the throat, and totally disabled him from resistance. On this the Indian, who was desirous of surprizing the king, and trying the constancy and bravery of his Dog, ordered his tail to be cut off; which was performed without difficulty, as the intrepid Dog was engaged in holding the lion. He next ordered one of his legs to be broken; which, however, did not in the least abate the ardour of the Dog, but he still kept his hold as before. Another leg was then broken; but the Dog, as if unconscious of pain, only pressed the lion with more eagerness. In this cruel manner, all his legs were amputated, without abating his courage; and at last, when even his head was separated from his body, the jaws seemed tenacious of their former hold. A fight so cruel did not fail to affect the monarch with very strong emotions, at once exciting pity for the Dog's fate, and admiration of his fortitude. On which the Indian, seeing him thus moved, presented him with four Dogs of the same kind, which in some measure alleviated his solicitude for the loss of the former.'

However, the breed of Dogs in India is at present greatly inferior to what the foregoing relation seems to imply; and in many places, instead of Dogs, the natives employ animals of the cat kind in their hunting-matches. In other parts of that vast continent also, this admirable and faithful animal, instead of being applied to his natural uses, is only bred for the sake of food. Throughout the extensive empire of China, there are Dog-butchers, and shambles for the sole purpose of vending their flesh. At Canton, in particular, there is a whole street appropriated to that use: and, what is very extraordinary, whenever a Dog-butcher makes his appearance, all the neighbouring Dogs immediately pursue him in full cry, and persecute him to the utmost of their power.

On the coast of Guinea, the flesh of Dogs is esteemed so great a delicacy by the negroes, that they will readily exchange a cow for a Dog: however, by this uncivilized race of human beings scarcely any living creature is ever rejected. It may indeed happen that the flesh of this animal, which is so indifferent in the temperate climates, may assume a superior quality in those which are more torrid: still, however, it is highly probable that the diversity is rather owing to man than to the flesh of the Dog; since, among the hyperborean savages, it is eaten with equal avidity; and Dog-scalls are as frequent with them as venison ones with us.

The wild animals which approach nearest to the Dog are the wolf and the fox; and these, though they greatly resemble each other in their internal conformation, are very distinct in their natures. The ancients believed that they bred together; and it is incontestibly evident that a Dog and a fox, or a Dog and a wolf, will engender in this country. Pennant informs us, that the proprietor of a menage in Holborn having turned a wolf to a Pomeranian hot bitch, the congress was as usual between Dog and bitch, and the fruits produced were ten puppies. 'One of them,' says this ingenious naturalist, 'I have seen at Gordon Castle, which had very much the resemblance of a wolf, and much

DOG

of it's nature; and, on being slipped at a weak deer, it instantly seized the animal by the throat, and killed it.' He could not, however, learn whether this mongrel continued it's species; though another of the same kind did, and stocked the vicinity of Fochabers, in the county of Murray, with a multitude of curs of a very wolfish aspect. A mongrel of this species was lately in the possession of Sir Willughby Aston. During the day-time, it proved very tame, but at night relapsed somewhat into it's natural ferocity. It never barked, but rather howled. When introduced by it's owner into a field or pasture where sheep were feeding, it generally feigned lameness; but in his absence it instantly attacked them. This creature had been observed to copulate with a bitch, which afterwards pupped; and the breed was imagined to bear a pretty strong resemblance to the supposed sire. As a farther proof that the bitch will breed with the fox, the wood-man of the manor of Mongewell, in Oxfordshire, lately kept one, which was the offspring of a tame fox by a shepherd's cur; and she afterwards pupped by means of a Dog. Since, therefore, such authentic proofs exist of the farther continuance of the breed, we may safely refer the wolf and the fox to the canine tribe.

However, all the endeavours of Buffon to procure a mixed breed of these animals proved ineffectual. This naturalist informs us, that he bred up a young wolf, taken in the woods at the age of two months, with a matin-dog of the same age. He shut them up together in a large yard, furnished with a shelter for their retirement. Neither of them knew any other individual of their kind, nor any of the human species except their feeder. In this situation they remained for three years, always properly attended, and free from all bodily restraint. During the first year, these young animals spent their time chiefly in sporting with each other. At the commencement of the second, they began to quarrel concerning their provisions, though supplied with more than they could possibly devour. Their disputes always originated on the part of the wolf; who, instead of proceeding to eat the victuals placed before them, immediately began to drive away the Dog, and catching up the wooden platter in which they were served, so expertly in her teeth as to suffer none of it's contents to fall on the ground, in this manner carried it off: but, as she could not entirely escape, she frequently ran round the yard with it five or six times, still holding it in the same position, though stopping at times for the purpose of breathing; till the Dog coming up, the wolf let fall her booty in order to attack him. The Dog, however, was the strongest of the two; but, being more gentle, had a collar always round his neck, the better to secure him from the fury of the wolf. On the arrival of the third year, the quarrels of those ill-paired associates becoming more vehement, and their combats more frequent, the wolf was necessarily collared, as well as the Dog, who began to be more fierce and untractable. During the two first years, neither of these creatures seemed to shew the least tendency towards engendering together; and it was not till the end of the third, that the wolf (the female) indicated any natural desire, but without abating either in her fierceness or obstinacy. This appetite rather increased than abated their natural animosity; they became daily more ungovernable and ferocious, and nothing but the growlings of discord and resentment resounded continually from their habitation.

DOG

tion. In the space of a few weeks, both of them appeared remarkably emaciated, and seldom approached each other without fighting. Their contests at last became so very desperate, that the Dog killed the wolf, who was now become extremely feeble and wasted: and he also was soon after obliged to be slain; for, on regaining his liberty, he instantly attacked every animal that came in his way, man himself not excepted.

The above ingenious naturalist tried the like experiment on young foxes, but with no better success, for they never engendered with Dogs; and he seems to be of opinion, that their natures are too opposite ever to provoke mutual desire. One circumstance however is observable; namely, that the animals on which he tried his experiments were probably too old when taken, and had in some measure acquired their natural savage dispositions before they came into his possession. This wolf, according to his own account, was two or three months old before it was caught, and the foxes were taken in traps. It may therefore easily be supposed, that nothing could ever after perfectly tame those creatures, which had been suckled in a wild state, and had imbibed all the habitudes of their dams.

The Dog, when first produced, is not a perfectly formed animal. In this kind, as in all the rest which bring forth many at a time, the young are less compleat than in those which bring forth only one or two. They are always whelped with their eyes closed, the lids being held together by a kind of membrane, which bursts as soon as the upper eye-lid becomes strong enough to raise it from the under one. In general, they continue blind till the tenth or twelfth day; during which period, the bones of their skulls are incompleat, their bodies are inflated, their noses are contracted, and their whole figure is but imperfectly represented. In less than a month, the puppy begins to acquire all it's senses, and from thence makes hasty advances to perfection. At the end of the fourth month, the Dog, like other animals, sheds some of his teeth, which are renewed by such of them as are permanent. The number of teeth amounts to forty-two, being twelve more than is found in any of the cat kind, which never have above thirty. The teeth of the Dog being his principal, and indeed his only defence, they are formed in such a manner as to render him the most essential services. There is scarcely any quadruped which either rends, cuts, or chews it's food with greater facility than the Dog. He cuts with his incisores, or fore-teeth; he holds with his four great canine ones; and he chews with his grinders, which are fourteen in number, and so placed, that when his jaws are shut, there remains a distance between them; so that this animal, on opening his mouth to the greatest possible stretch, does not lose the power of his jaws. But the case is very different with respect to the cat kind, whose incisores, or cutting-teeth, are very small; and their grinders, when brought in contact, touch more closely than those of the Dog, and consequently have less power.

The Dog, who is capable of propagating his kind at the age of one year, generally lives to that of twelve; and the female goes with young nine weeks. Though few quadrupeds are less delicate with respect to their food, there are many kinds of birds which the Dog will not venture to touch; and, even in a savage state, he refrains from in-

DOG

juring some to which nature seems to render him inimical. The wild Dogs and vultures about Grand Cairo in Egypt, according to the ingenious Hasselquist, generally associate together. As they are both very serviceable in devouring such carcases as would otherwise putrify, and thus infect the air, the inhabitants supply them daily with food, in order to keep them near the city; and on these occasions they are often seen together, feeding on the same piece of flesh without the smallest appearance of animosity.

Though the Dog is a voracious animal, he is capable of enduring hunger for a considerable time: and a remarkable instance of this kind is recorded in the Memoirs of the Academy of Sciences; namely, that of a bitch, who having been accidentally shut up in a country-house, lived there forty days, without any other nourishment than what she derived from the wool of a bed-quilt which she had torn to pieces. It seems, indeed, that water is more necessary to the subsistence of the Dog than food: he drinks often, though not in great abundance; and it is an universally received opinion, that if this animal be denied a sufficient quantity of this wholesome fluid, he will very soon discover symptoms of madness. This dreadful malady, the consequences of which are so well known, is the greatest inconvenience that results from the keeping this faithful domestic. But the distemper is by no means so frequent as the timorous are apt to imagine: the Dog is often supposed to be mad when he only labours under some common complaint; and, when he happens to bite under such circumstances, the force of imagination is frequently productive of the most fatal effects.

The Dog was consecrated to Mercury, the most vigilant and crafty of all the heathen deities, because vigilance and sagacity are the attributes of that animal. According to Pliny, the flesh of young Dogs was reckoned so pure, that it was offered in sacrifice to the gods, and served up in the repasts prepared for them. Among the Egyptians, these animals were held in universal veneration; but this awful respect was greatly diminished when, after Cambyfes had killed Apis, and caused him to be thrown into the laystall, the Dog alone, of all animals, fed on his carcase. The Romans crucified one of these creatures annually, by way of punishment for their neglect in not warning them, by their barking, of the arrival of the Gauls, who besieged the Capitol. If we may credit Ælian, the inhabitants of a certain country in Æthiopia had a Dog for their king, whose caresses and barkings they considered as marks of his favour or resentment; and around the temple dedicated to Vulcan on Mount Ætna, (says the same author) are placed sacred Dogs, which, as if endowed with reason, fawn on those who approach that temple with modesty and devotion, but bite and devour others whose hands are unclean.

DOG, SHEPHERD'S. This species, which is the *Canis Domesticus* of Ray, and *le Chien Berger* of Buffon, is common in almost every country of the world, without any very considerable variations; and so well known, as not to require any particular description.

DOG, HOUND. This animal is well known for it's uses in hunting. There are three varieties, all produced by the same dam; namely, the Hound, the harrier, and the beagle. The ears are long and pendulous; the nose is obtuse; the mouth is large;

DOG

large; and the barking is loud and deep. If this creature, as before observed, is transported into Spain or Barbary, where the hair of all animals becomes soft and long, it will be converted into the land and water-spaniel, of different sizes.

DOG, SPANIEL. From the name of this creature, it would seem as if we were indebted to Spain for the breed. Animals of this kind vary in size, from the setting-dogs to the springing Spaniels, and some of the small lap-dogs. Britain has long been famous for producing excellent Dogs of this sort, great care having been taken to preserve the breed in its original purity. They are still distinguished by the name of English Spaniels; and, notwithstanding the derivation of the term, it is probable that they are natives of Great Britain. The pointer, which is a Dog of foreign extraction, was unknown to our ancestors; and the finder, which was another species used in fowling, appears to have been the same with our Water-Spaniel.

DOG, GREY-HOUND. This species, which is indiscriminately known by the names of the Grey or Gre-Hound, and is the swiftest of all Dogs, pursues his game by the sight, and not by the scent. The head and legs are long; and the body is so extremely slender, that the creature appears peculiarly adapted for fleetness. The Grey-Hound was formerly esteemed of the first rank among Dogs, as appears from the forest-laws of King Canute, who enacted, that no person under the degree of a gentleman should presume to keep that animal. The varieties are, the Italian Grey-Hound, which is small and smooth; and the Oriental Grey-Hound, which is tall and slender, with very pendulous ears, and long hair on the tail.

DOG, IRISH GREY-HOUND. This animal, which is also called the great Irish Wolf-Dog, is very rare even in the only country in the world of which it is a native; and is kept rather for shew than use, there being neither wolves, nor any other beasts of prey, in Ireland, which appear to require so powerful an antagonist. The Wolf-Dog is therefore bred up only in the houses of the great, or of such gentlemen as chuse to keep him by way of curiosity, being neither useful in hunting the hare, the fox, nor the stag; and equally unserviceable as a house-dog. Nevertheless, he is extremely beautiful and majestic, and the largest of the canine race to be seen in the world. Some of these formidable animals are about four feet high, or as tall as a calf of a year old. In their shape, they strongly resemble the Grey-Hound, but are rather more robust, and inclining to the figure of the French mastiff, or the great Dane; and though they appear heavy and phlegmatic in their dispositions, one of them is so amazingly strong, as to be capable of engaging singly with the bear.

Buffon is of opinion, that these are the true Molossian Dogs of the ancients: but as he has adduced no proofs in support of his notion, other naturalists are inclined to suppose it ill-grounded. If these animals are transported to other countries, they soon degenerate; and even in their native climates they are subject to change, unless great care is taken to prevent it. Formerly they were employed in clearing the island of wolves, which greatly infested it; but these beasts of prey being now exterminated, the Dogs also begin to decline, as if nature intended to obliterate the species when they were no longer serviceable: and in this man-

DOG

ner various kinds of animals, once well known, have gradually dwindled from the face of the earth.

DOG, DANISH. This very large Dog resembles the mastiff, except that its body and head are longer and more slender. Danish Dogs are generally of a yellowish brown colour; but some are grey, and others quite black. They carry their tails turned up, and have large high foreheads. Of this kind, perhaps, were the Dogs of Epirus, mentioned by Aristotle; or those of Albania, so well described by Pliny.

DOG, MASTIFF. The Mastiff Dog is large and strong, and barks very loud. His head is extremely large; and his lips, which are very full, depend on each side. He has a noble mien, and rather commands respect than excites terror. Dr. Caius informs us, that three of these Mastiffs are reckoned a match for a bear, and four for a lion; but, from an experiment made in the Tower by King James I. a lion was an unequal match for only three of them; for though two of the Dogs were disabled in the combat, the third put the lion to flight.

Great-Britain was formerly so celebrated for its Mastiffs, that the Roman emperors had certain officers in this island, whose sole business consisted in superintending the breed, and transporting from hence to their amphitheatres such of these animals as were deemed proper for their combats. But Mastiffs are now usually employed in guarding houses, yards, and other places in which property is lodged, from the invasions of robbers.

DOG, BULL. This species has a large thick head, and a short nose; the under-jaw is longer than the upper; and the tail is turned upwards. The Bull-Dog, which is a strong, fierce, and cruel creature, frequently bites before he gives warning of his approach. He is peculiar to England; and, since the refinement of the age has suffered bull-baiting to decline, the breed is become more scarce.

DOG, PUG. This variety, called also the Dutch Mastiff, somewhat resembles the Bull-Dog, but is vastly smaller, and destitute of any of his intrepid qualities. The muzzle is black; the nose is flat; the hair is a yellowish brown; and the tail is turned up in a curl. The ears of Dogs of this kind are generally cut off, that their heads may appear rounder. Some of them have black lists running down their backs; but so great are the varieties in this species, that no positive description of them can possibly be given. The Pug-Dog is a very domestic animal, never following his master to any considerable distance from home.

DOG, TERRIER. The Terrier is a small rough kind of hound, extremely well adapted to hunt the fox or the badger out of their holes; or rather, by his barking, to give notice in what part of their kennels they reside, when the sportsmen purport to dig them out. Agreeable to the caprice of mankind, animals either become fashionable, or fall into decay; and accordingly the Terrier is at present in high estimation in this island; but how long he will continue the general favourite, time only can develop.

DOG, GAZEL HOUND. This animal received his appellation from his hunting by the eye, and not by the scent. He seemed equally adapted for the chase of the buck, the fox, or the hare; for he would select from the herd the finest deer, pursue it by the eye for a long time, and if accidentally lost,

DOG

lost, recover it again by this singular distinguishing faculty, even though the animal should have rejoined the herd. This species, however, is now either lost, or totally unknown among us.

DOG, BLOOD-HOUND. This creature was in high estimation among our active ancestors. His usefulness consisted in recovering any game that had either escaped from the hunter in a wounded condition, or had been killed and stolen out of the forest. When Great-Britain was less populous than at present, he was likewise employed in hunting thieves and robbers by means of their footsteps: at this time, however, the country being every where peopled, this variety seems to be entirely worn out. See BLOOD-HOUND.

DOG, LEYMMER. This animal, according to Caius, hunted both by the scent and sight; and, with respect to the shape of his body, partook of the hound and the grey-hound. He was usually conducted to the field by a leyme, or thong; from whence his name is derived. This species is at present entirely unknown.

DOG, TUMBLER. This animal, which is also called the Rabbit-Dog, somewhat resembles the small grey-hound. He appears as if at play with his game even at the very time he is in pursuit of it. When he enters a warren, he neither barks, nor runs after the rabbits; but, seemingly inattentive, approaches so near, as to be within the reach of his prey, which he seizes with a bound, after the manner of the feline-tribe.

DOG, LAP. Lap-Dogs are of various kinds and sizes, owing to climate and culture. The Maltese little Dogs, so much esteemed by the ladies of ancient times, now give place to those of Bologna. The smallest ones are generally preferred; but, the more singular and extraordinary they are in their conformation, the more they are valued by their whimsical admirers.

DOG, SMALL DANISH. This animal, which is very gentle and sportive, resembles the harlequin Dog, except that he is shorter. His head is round; his eyes are large; and his nose is small and slender.

DOG, HARLEQUIN. The Harlequin Dog resembles the last described animal, but is longer, and generally black and white; though some are white, and of a cinnamon hue. There are several varieties among these; and, indeed, among all the smaller species.

DOG, CUR. The Cur-Dog, called also the House-Dog, is about the size of the fox, with upright ears, and a kind of woolly hair beneath his tail. Cur-Dogs are generally of a mongrel breed, and consequently their shapes and sizes must be very different.

DOG, SHOCK. Shock-Dogs are distinguished by their long curled hair, of which they have such large quantities, that some of the white kinds have the appearance of sheep; but their shape is very different, and their hair hangs so low and full on their heads, that their eyes seem almost lost.

DOG, TURKISH. This animal differs from all the other species in being entirely destitute of hair. The skin is smooth, of a flesh-colour, and interspersed with brown spots. The Turkish Dogs seem to be of the small Danish breed, introduced into a warmer climate, where, in a succession of generations, they become divested of their hair; they are therefore unable to endure the rigours of our climate, being extremely chilly, and subject to frequent shiverings even during the most favourable seasons of the year.

DOG

DOG, LION. This creature resembles the animal in miniature from whence he receives his name. The hair of his fore-parts is extremely long, and that of his hinder ones equally short; his nose is obtuse, and his tail long and tufted at the point; so that he resembles the lion in all the foregoing particulars. But, notwithstanding this similarity, he differs very much from that fierce animal in his nature and disposition, being one of the smallest creatures of the kind, and extremely feeble, timid, and inactive. The Lion Dogs were brought originally from Malta, where they are so very diminutive that the women frequently carry them in their sleeves.

DOG, NEW ZEALAND. This species, which seems to have been originally brought from New Guinea, is likewise found in the Society Islands, and pretty much resembles the sharp-nosed, pricked-eared shepherd's cur. In the above islands, where these animals constitute the common food of the inhabitants, they are fattened with vegetables, which are generally crammed down their throats when they will not voluntarily eat them. They are usually dispatched by strangling; and the extravasated blood is preserved in cocoa-nut shells, and baked for the table. They grow exceedingly fat; and some Europeans, who have been enabled to overcome their prejudices to this kind of fare, allow the flesh to be sweet and palatable. However, this custom is not confined to those simple islanders alone; the ancients reckoned a young and fat Dog excellent food, especially if he had previously been castrated. Hippocrates deemed the flesh of a grown Dog equal to mutton or pork, and very wholesome and strengthening; and the Romans, who were very fond of sucking-puppies, sacrificed them to their divinities, and esteemed them as viands in which the gods themselves delighted.

DOG, BARRET. This animal, which is a native of New Zealand, is covered with a kind of long silky hair much valued by the natives in trimming their ornamental dresses; but his flesh is not eaten, like that of the common species. The Zealanders never make use of their Dogs for the same purposes as the Europeans; and indeed they are so excessively stupid, and possess the sense of smelling in so imperfect a degree, that they seem totally unfit for the chase. They live entirely on fish; and so much care is taken of them by the natives, that they are never suffered to wet their feet.

DOG, KAMTSCHADALE. The late ingenious Captain King informs us, that this animal, in his shape and mien, exceedingly resembles the Pomeranian, or Wolf-Dog, except that he is considerably larger, and his hair somewhat coarser. The colours of these Dogs are various, but the prevailing one is a light dun, or dirty cream. 'Towards the latter end of May,' says he, 'they are all turned loose, and left to provide for themselves during the summer, being sure to return to their respective homes as soon as the snow begins to fall. Their food in winter consists entirely of the head, entrails, and bones, of salmon, which are saved for that purpose; and with this diet they are but sparingly fed. In this country the breed is very plentiful, as may easily be conceived from the great numbers employed in drawing sledges: five of them are yoked to one sledge, which carries only a single person; and it is remarkable, that bitches are never used for this purpose, nor even Dogs before they have been castrated. The whelps are trained to this business, by being tied to stakes with light leather thongs which are made to stretch,

DOG

and having their victuals placed at a proper distance out of their reach; so that by a constant pulling and exertion to come at their food, they acquire both that strength of limbs and habit of drawing which qualify them for their future destination.

When the Kamtschadales intend to perform a journey in winter over the frozen snow which covers their country, they yoke five Dogs, two and two, with a leader, to a sledge about four feet and a half long, and one foot wide, made in the form of a crescent, of light tough wood strongly bound together with wicker-work. This sledge is supported by four legs, about two feet high, which rest on two flat pieces of wood five or six inches broad, and extending a foot at each end beyond the frame of the sledge. These are turned up before in the manner of a skate, and shod with the bones of some marine animals. The fore-part of the carriage is ornamented with thongs of leather and tassels of coloured cloth; and from the cross bar, to which the harness is joined, are hung links of iron, or small bells, the jingling of which is supposed to animate the Dogs. The passenger sits aside, resting his feet on the lower part of the sledge, and carrying his provisions and other necessities wrapped up in a bundle behind him. The reins not being fastened to the heads of the Dogs, but to their collars, have little power over them; and are therefore generally hung on the sledge, while the driver depends entirely on their obedience to his voice for the direction of them. With this view the leaders are always trained up with a particular degree of care and attention; and some of them rise to an extraordinary value on account of their steadiness and docility. The driver is also provided with a crooked stick, which answers the double purposes of whip and reins; as, by striking it into the snow, he is enabled to moderate the speed of the Dogs, or even to stop them entirely; and when they are lazy, or otherwise inattentive to his voice, he chastens them by throwing it at them. On these occasions, their dexterity in picking it up again is very remarkable, and forms the principal difficulty of their art. Yet it is not surprizing that they should labour to become expert in a practice on which their safety so materially depends: for it is said, that if the driver should happen to lose his stick, the Dogs instantly perceive it; and unless their leader be of the most sober and resolute kind, they will immediately run a-head full speed, and never stop till they are quite spent; but as that does not happen very soon, the carriage is either overturned and dashed to pieces against the trees, or hurried down some precipice, and buried in the snow.

The above respectable gentleman, to whom we are indebted for the foregoing relation, observes, that the accounts given him of the fleetness of these Dogs, and of their extraordinary patience under the calamities of hunger and fatigue, were scarcely credible, if they had not been supported by the best authority. 'But,' proceeds he, 'we were indeed ourselves witnesses of the great expedition with which the messenger, who had been dispatched to Bolcheretsk with the news of our arrival, returned to the harbour of St. Peter and St. Paul, though the snow was at this time exceedingly soft; and I was informed by the commander of Kamtscharka, that this journey was generally performed in two days and a half; and that he had once received an express from the latter place in twenty-

DOL

three hours, though the distance is not less than one hundred and thirty-five English miles.'

DOG-FISH, PICKED, or HOUND-FISH. This fish, which is a variety of the shark kind, receives its name from a sharp spine placed exactly before each of the back-fins, and distinguishing it at once from the rest of the British sharks. The body, which is roundish and oblong, is covered with a rough skin, generally known by the name of fish-skin, and used by joiners and other artificers in polishing various substances, particularly wood. The back is of a brownish ash-colour; and the belly is white and very smooth. The nose, which is long, extends a considerable way beyond the mouth, but is blunt at the end; the eyes are shaped somewhat like a boat, and covered with double membranes; the mouth, which is placed just under the eyes, is armed with a double row of small teeth; and the two back-fins have strong sharp spines or prickles standing before them, of which the one nearest the head is thicker and longer, and that nearest the tail shorter and smaller. These fish, when at their full growth, weigh about twenty pounds each; and bring forth their young alive, which are produced from eggs hatched within their bodies. They are caught in the British ocean and the Irish seas: but on the coasts of Scotland in particular, where they swarm, they are dried, and constitute a considerable part of the food of the common people.

DOG-FISH, SMOOTH. This species has no teeth; but the bones of each jaw, which are as rough as a file, supply their place. The skin is perfectly smooth, though in all others of this kind it is rough; and by that variation alone this creature is easily distinguishable from the picked Dog-Fish.

DOG-FLY. A species of Fly very common among woods and bushes, and extremely troublesome to dogs. These Flies usually fasten on the ears of those animals, from whence they are seldom dislodged except by being killed. They sting very severely, and always occasion a swelling. They somewhat resemble those flat black flies so inimical to cattle. They are destitute of trunks, but are furnished with two teeth like those of the wasp; and their wings adhere so close to their bodies, as to be scarcely perceptible.

There are two varieties of the Dog-Fly; the largest is generally found in woods, and the smallest frequents hedges.

DOG'S TOOTH SHELL. See DENTALIS.

DOLIUM. A genus of shells, called by some authors *conchæ globosæ*; and, by French naturalists, *tonnes*. The characters of the genus are these: an univalve shell having a globose or round belly, with a lax aperture, sometimes smooth, and at others dentated; the clavicle is either moderately umbonated, or depressed; and the columella is in some species smooth, and in others wrinkled. These shells are also by some termed *conchæ ampullaceæ*; and they have at various periods been distinguished by other names; but all tend to express the globular figure of the body, the leading character by which they are distinguished from all other shells.

The Persian Dolium, so frequently employed in ornamenting the cabinets of the curious, is a very singular species; but the globose figure of its body evidently refers it to this genus, though it differs in many particulars from every other class. There are six species of the round umbilicated Dolia; five of the oblong and smooth; seven of the oblong, costated,

costated, and umbonated; five of those with long and arched tails; and seven of that series which, from their figure, are called bullæ; to all which may be added a very curious species of fasciated Dolium, of a blue colour externally, and white internally; by some naturalists called the vitta cœrulea; and of which kind there is an olive-coloured shell.

DOLPHIN. The Dolphin, in the Linnæan system of zoology, constitutes a distinct genus of fishes of the order of cete, and class of mammalia; the characters of which are, that there are teeth in both jaws, and that there is a pipe in the head.

Historians and philosophers have seemingly contended, who should invent the greatest number of fables concerning the Dolphin. In the earliest ages, it was celebrated for its attachment to the human race, and distinguished by the name of the Boy-loving, and Philanthropist. Scarcely could an accident happen in the liquid element, but the intervention of the Dolphin afforded relief to the unfortunate. The musician Arion, thrown into the sea by pirates; and the boy taking an airing in the midst of the sea, and returning again in safety; were obliged to the Dolphin for its services. It is not easy, however, to assign a reason for this extraordinary predilection of the ancients towards this creature: its figure is far from prejudicing us in its favour; and its extreme rapacity tends still less to endear it to us. Indeed, there appears to be no qualities in this animal capable of exciting the compassion of the human race, except its plaintive moanings; by which, when taken, it sometimes indicates its sense of pain, and continues to express it till it expires. This circumstance might at first, in all probability, have excited human pity, and produced affection. At present, however, Dolphins are regarded, even by the vulgar, in a very different light: their appearance is generally esteemed a very unfavourable omen by mariners; since, from their boundings and frolics in the water, they have often been taught to expect an approaching storm.

Neither have the ancients confined their fabulous reports concerning these animals to one circumstance only: as, from their leaps out of the water, they assume a temporary curvature, which is by no means their natural figure, the old painters and sculptors have universally erred in their delineation. Dolphins are scarcely ever exhibited by the ancients in a straight shape, but curved, in which position they sometimes appear when exerting their force; and the poets also, for whom prescription may be pleaded, have adopted the general error. Aristotle, indeed, of all the ancients, steers the clearest from the intermixture of fable with description; and gives us in general so faithful a history of this animal, as evinces his judgment and sagacity to be superior to those of all his successors. But the elder Pliny, Ælian, and some others, have set no bounds to their credulity and fiction: the former asserts that a Dolphin, if taken out of its native element, will instantly die, while Rondolietus, on the contrary, assures us, that he has seen one carried alive from Montpellier to Lyons.

The moderns, however, have acquired juster notions of these animals, and rejected the various fables concerning them which daily experience serves to contradict. Indeed, their numbers are so great, and (though naturally shy) they are so frequently caught, that such peculiarities, were they really possessed of them, would have been long

since ascertained. They are frequently seen in such large shoals in almost all the circumambient seas of this kingdom, that they prove noxious, and sometimes even fatal, to seamen who navigate small vessels. In some places, when they rise to the surface for the purpose of breathing, they almost totally darken the water; and particularly, before boisterous weather, they seem to be much agitated, swimming against the wind, and tumbling about with unusual violence; but whether these motions are the gambols of pleasure, or the agitations of terror, cannot well be determined. It seems most probable, however, that they have an instinctive apprehension of those seasons of turbulence, when the lesser fishes shrinking to the bottom, their prey no longer presents itself in its usual abundance. In calm and temperate weather, they are seen herding together, and pursuing shoals of various fish with great impetuosity. The method which they adopt in hunting their game, if it may be so called, is to follow in packs, and thus yield each other their mutual assistance. At those seasons when mackarel, herrings, salmon, and other fish of passage, begin to make their appearance, the cetaceous tribes are observed to be more fierce in their pursuit, urging their prey from one creek or bay to another, deterring them from the shallows, driving them towards each other's ambush, and using all the various arts which their instinctive faculties are capable of teaching them.

But it sometimes happens that either the impetuosity or hunger of the Dolphin, and its companions the porpus and the grampus, in their usual pursuits, urges them beyond the limits of safety. The fishermen on the Cornish coasts, who spread their extensive nets for pilchards, sometimes experience a very unwelcome capture in one of these creatures: on such occasions, their feeble nets, which are only calculated for the detention of the smaller kinds of fish, suffer an universal laceration from the efforts of this strong animal to escape; and, if not dispatched before it has had time to flounder, the nets are inevitably destroyed, and the fishery is interrupted.

The natural shape of the Dolphin is almost straight, the back being very slightly incurvated, and the body slender. The nose, which is long, narrow, and pointed, somewhat resembles a bird's beak; and hence it is called by the French *L'oye de Mer*. It has forty-two teeth, each a little more than an inch in length, conic at their upper ends, sharp-pointed, and slightly bending inwards: they are placed so very little asunder, that when the creature's mouth is shut, the teeth of both jaws lock into each other. The spout-hole is situated in the middle of the head; the back-fin is high, triangular, and somewhat nearer the tail than the head; and the pectoral fins are placed very low. The tail describes the form of a crescent; the skin is smooth; the colour of the back and sides is dusky; and the belly is whitish.

Dolphins were formerly esteemed great delicacies in this country; and Dr. Caius remarks, that one of them, caught in his time, was thought a present worthy of the Duke of Norfolk, who distributed part of it among his friends: it was roasted, and dressed with porpus sauce made of crumbs of fine white bread mixed with vinegar and sugar.

Several parts of the Dolphin are applied to medicinal uses, namely, the liver, the ashes, the belly, and the fat. The belly, when dried, triturated, and exhibited in some proper fluid, is said to cure splenetic

splenic patients; and we are told that the liver, when roasted, and used with aliments, perfectly cures tertian and quartan fevers, and also that species of nocturnal fever known by the name of typhus. Pliny enumerates the ashes of the Dolphin among the specifics for curing the ring-worm and leprosy; and, according to the same author, the fat, when melted and drank with wine, proves effectual in the removal of dropsies.

The Dolphin is said to go ten months with young; and, like the whale, seldom to bring forth more than one at a time, and that in the middle of summer. It lives a great number of years, though some say not more than twenty-five or thirty. This species of Dolphin, however, should not be confounded with that to which sailors give the same name; the latter being the *coryphæna hippuris* of Linnæus, and the dorado of the Portuguese described by Willughby.

DOLPHIN OF THE MODERNS. This fish, the hippuris of some authors, and the dorado of others, has a flat and roundish snout, and the body tapers from the head to the tail; but it's principal beauty consists in it's colours, which are indeed very brilliant. The back is wholly enamelled with blueish green spots, which shine like jewels in a dark ground; the tail and fins are of a gold-colour; and nothing can exhibit a more beautiful appearance than this fish when either viewed in it's native element, or before it is quite dead. It grows to the length of five or six feet, and is nearly as thick as the salmon. A remarkable fin runs from the head, along the back, to the root of the tail, which in the middle is seven inches broad, and consists of a kind of coriaceous membrane with soft spines; opposite to which there is another fin, not more than one inch broad, and extending from the vent to the tail. The tail, which is upwards of two feet and a half long, is divided into two large horns; and the scales are so very minute as to be hardly perceptible. This fish swims with such amazing velocity, as frequently to keep pace with a swift-sailing ship for a considerable space of time. See *CORYPHÆNA*, and *HIPPURIS*.

DONAX. A genus of bivalve shells, the marginal front of which is much blunted; and the inclosed animal is a tethys. There are only two species found on the British coasts.

DONAX, YELLOW. The outside of this shell is of a glossy whitish colour tinged with a dirty yellow, and marked longitudinally with numerous elegant minute striæ; and the inside is purple. This species is upwards of one inch in breadth.

DONAX, PURPLE. This shell is somewhat broader than the preceding, of a uniform shape, extremely blunt at one end, striated like the former, and serrated at the edges. It is internally of a purplish colour, and tinged with the same hue externally.

DONGON. The Philippine name for a peculiar species of crane. The body, which is large, resembles that of the goose; the neck is rather short; and the beak, which is very long and broad, is of a greyish colour. There is also another remarkable species of crane peculiar to the Philippine islands, called by the natives tipul or tihol; which is so very tall, that, when standing erect, it is capable of overlooking a middle-sized man.

DONNA. A name given by Zuchelli, and some other authors, to the manati or sea-cow.

DONZELLINA. The julis: a very beautiful fish caught in the Mediterranean seas, and ap-

proaching to the nature of the turdus or wrasse. See *JULIS*.

DORADO. A large sea-fish, called by the Brazilians *guaracapeina*. There is a sort of crest on the head, adjoining to a large fin which extends to the tail; and there is likewise another fin which reaches from the vent to the tail. The ventral fins extend almost to the vent, which is placed in the middle of the body; the mouth is of a moderate size; there are sharp teeth in the jaws, palate, and tongue; the eyes are large; the scales are extremely small; and the colour is a blueish green. This fish gradually decreases in thickness from the head; and the flesh is fat, sweet, and solid, like that of the tunny. The Dorado resembles the dolphin of the moderns, or hippuris, in such a number of particulars, that many naturalists have supposed them to be one and the same fish.

DOREAS LYBICA. A name given by Ælian and some other naturalists to the common antelope.

DOREE, or JOHN DOREE. A fish called by the generality of naturalists *faber*, *gallus marinus*, and *zeus*. The term Doree is borrowed from the French; and, with respect to the word John, prefixed to it by some writers, it seems to be only a corruption of the French word *Jaune*, Yellow; that nation expressing the colour of the sides of this fish by the phrase *Jaune Doree*; whence the appellation John Doree; or, among the vulgar, John Dory.

Superstition has made the Doree to rival the haddock for the honour of having been the fish out of whose mouth St. Peter took the tribute-money; leaving on it's sides those incontestible proofs of it's identity, namely, the marks of his finger and thumb. But it is difficult, and indeed unnecessary, to determine on which side to give a verdict; the Doree likewise asserting an origin of it's spots of a similar nature, but of a much earlier date than the former: for St. Christopher, if we may credit Belonius and Aldrovandus, in wading through an arm of the sea, having caught a fish of this kind en passant, as an eternal memorial of the fact, left the impressions on it's sides to be transmitted to all posterity.

The form of the Doree is extremely forbidding. The body is oval, and greatly compressed on the sides; the head is large; the snout projects greatly; the mouth is very wide; the teeth are extremely small; and the eyes are large, the irides being yellow. The lateral line is unusually distorted, sinking at one end, and rising near the middle of the back; and beneath it, on each side, there is a black round spot. The first dorsal fin consists of ten strong spiny rays, with long filaments reaching far beyond their extremities; and the second, which is placed near the tail, is composed of twenty-four soft rays, the middlemost being the longest. The pectoral fins have fourteen rays, and the ventral seven: there are also two anal fins; and the tail, which is round at the extremity, consists of fifteen branched rays. The weight of this fish seldom exceeds twelve pounds. It is called the Doree, or gilt-fish, from it's shining appearance when alive. It's sides are of an olive colour, varied with light blue and white; and indeed the beauty of it's colouring in some measure atones for the deformity of it's figure.

It was long before this fish attracted the notice of Britons, as one not only edible, but even delicious. The vulgar prejudices which arose from it's deformity deterred our ancestors from tasting it: but

but the late Mr. James Quin, that judicious comedian and bon vivant, effectually established its reputation, and added a most delicious fish to the catalogue of luxuries.

The Doree is found not only in the southern seas of this kingdom, but likewise on the coast of Anglesea. Those of the largest size are taken in the Bay of Biscay off the French shores; and also in the Mediterranean seas.

DOREE, INDIAN. This fish, which is caught in many parts of the East Indies, and called meerhaen by the Dutch, appears to be the same with the animal described by Marcgrave under the appellation of the abacatui.

DORIS. A genus of creeping worms, of which there are several species. The body is oblong, and flat beneath; the mouth is placed below, and the vent behind; and there are two retractile feelers.

DORIS, LEMON-COLOURED. The body of this species is oval, convex, and marked with numerous punctures; the vent being surrounded with elegant ramifications. It is of a lemon colour; and is found in different parts of the British seas, particularly near Brighthelmstone, where it is called the sea-lemon.

DORIS, WARTY. This variety, which is found near Aberdeen in Scotland, is of an ovated figure, convex, and tuberculated.

DORIS, AMBER. The body of this species resembles the snail; its front is abrupt; and its colour is like that of amber. It inhabits the seas near Anglesea.

DORMOUSE. A kind of wild field-mouse, called also the sleeper, belonging to the order of glires in the Linnæan system; having two cutting teeth in each jaw; four toes before, and five behind; and naked ears. These mice inhabit woods and thick hedges; and build their nests, which are lined with moss and dead leaves, either in the hollow parts of trees, or near the bottoms of close shrubs. Towards the approach of winter, they form little magazines of nuts, beans, or acorns, on which they subsist during that rigorous season immured in their retreats. As soon as they perceive the first advances of the cold, they prepare to mitigate its effects by rolling themselves up in balls, and thus exposing their smallest surfaces to the weather. But it frequently happens that either the warmth of the sun, or an accidental transition from cold to heat, thaws their nearly stagnant fluids, and awakes them from their temporary lethargy; on such occasions, their provisions being at hand, they are not under the necessity of searching for the means of subsistence at the hazard of their lives. In this manner they usually continue, sometimes asleep, and at others awake, during five months of the year; and, as they seldom venture from their abodes, they are of course but rarely seen. They usually bring forth three or four at a time; but that only once a year, viz. in the spring season.

Buffon distinguishes these animals into three species; namely, the greater Dormouse, called the loir; the middle, termed the lerot; and the less, denominated the muscardin: but we shall adopt the divisions of the ingenious Pennant, whose accuracy with respect to subjects of natural history, we are inclined to think, justly entitles him to pre-eminence.

DORMOUSE, COMMON. The eyes of this species are full and black; the ears are round and naked; the tail is two inches and a half long, and

pretty hairy towards the extremity; the body is about the size of that of the common mouse, but rather more plump; and the colour is a tawny red, except on the throat, where it is white. This variety inhabits almost every part of Europe. It generally builds its nest near the bottom of a thick hedge, either with moss or the leaves of trees; and subsists on nuts, which it eats in a kind of erect posture, after the manner of the squirrel. At the commencement of the brumal season, it rolls itself up in its retreat, where it lies in a torpid state till revived by the genial heat of the returning spring. Sometimes, however, when the weather proves unusually mild in winter, it seems to revive; but when that motive ceases, it very soon relapses into its former state.

DORMOUSE, STRIPED. This animal is a native of the northern parts of Asia, and also of America. When deprived of all other means of escape, it will ascend a tree: however, it usually burrows under ground, where it forms a habitation with two entrances, that it may be furnished with the means of egress should one or other of the passages be accidentally stopped up. This retreat, which is very ingeniously contrived, resembles a long gallery with diverticles on each side, each terminating in an enlarged chamber, which serve as granaries for the animal's winter provisions: in one, acorns are deposited; in another, maize; in a third, hickory nuts; and, in a fourth, chinquapin chefnuts, which seem to be their favourite aliment.

These creatures seldom venture abroad during the winter, at least while their provisions hold out; but when they happen to fail, which is sometimes the case, they make their way into cellars where apples are lodged, or into barns stored with maize, and there make great havock. During the maize-harvest, they bite off the ears, and cram their mouths so full with that kind of corn, that their cheeks appear greatly distended. It has already been observed, that they shew a great predilection to particular sorts of food; and accordingly, if they happen, after filling their mouths with rye, to meet with wheat, they instantly relinquish the former, in order to feast on the latter. They are extremely wild, bite very severely, and seem incapable of being tamed.

The ears of the Striped Dormouse are plain; the ridge of the back is marked with a double black streak; and each side with a pale yellow stripe, bounded both above and beneath by a black line. The head, body, and tail, are of a reddish brown colour; the breast and belly are white; the nose and feet are a pale red; and the eyes are full and prominent.

DORMOUSE, FAT, THE LOIR OF BUFFON. The body of this animal is covered with soft ash-coloured hair; the belly is whitish; the tail is surrounded with very long hair; the ears are thin and naked; the length, from the nose to the tail, is nearly six inches, that of the tail being four and a half, and the body is thicker than that of the squirrel.

This species, which inhabits the southern parts of Europe, and also the south-west parts of Russia, lives in the hollows of trees. It feeds on fruits and acorns; and remains in a torpid state during the winter season. The flesh of this creature was reckoned a peculiar delicacy among the ancient Romans; and we are informed that it is at present much esteemed in some parts of Italy.

DORMOUSE, GARDEN. The eyes of this animal are surrounded by a large black circle, reaching almost

D O T

almost to the bases of its ears, behind which there is a large spot of the same colour. The head and body are of a tawny colour; the throat and belly are white, tinged with yellow; and the tail is long, the hairs at the beginning being very short, and bushy at the extremity. It measures five inches from the nose to the tail, which last is about four inches in length.

The Garden Dormouse inhabits the southern countries of Europe; and is also found in magpies nests and hollow trees about the banks of the Volga and other temperate parts of the Russian dominions. Delighting in all sorts of fruit, it is very destructive to gardens; and generally fixes its abode in a hole of some decayed wall, where it remains in a state of torpidity during the winter. It has a rank smell, like that of the rat; and usually brings forth five or six at a time.

DORMOUSE, EARLESS. The head of this species is flat; the nose is obtuse; the eyes are full and black; and the upper lip is divided. The apertures of the ears are scarcely visible; the whiskers are long; the toes are large and distinct; and the claws are very long. The head, back, sides, and front of the fore-legs, are of a pale ferruginous colour intermixed with black; a black line extends on each side from the shoulder to the hind-parts, and above each eye there is another; the belly and feet are of a dirty white hue; the tail is black in the middle, and hoary on the sides; and the hind-legs are black behind, and naked.

This animal, which inhabits the interior parts of Africa, never climbs trees, but burrows under ground; and feeds on bulbous roots, especially potatoes, of which it appears exceedingly fond. It frequently walks on its hind-feet; it is very tame and inoffensive; and it covers the orifice of its nest with various materials, the better to conceal the inhabitants.

DORSCH. A small fish of the cod kind frequently caught in the Baltic, though but rarely in other seas; and known among authors by the name of *asellus varius*, or *striatus*. It is remarkable for having the softest and smoothest skin of all the cod kind; nevertheless, it is not destitute of scales. It usually grows to about a foot in length; and approaches very nearly to the whiting pollack; but with this difference, that it is furnished with a beard. Its flesh is delicate and wholesome.

DOTTEREL. The name by which the *morinellus* is commonly known in most parts of Great Britain. This bird is about ten inches long, and the expansion of its wings is nineteen and upwards. The female weighs about a quarter of a pound; but the male is somewhat lighter, as well as smaller. The bill is black, slender, and about an inch long; the forehead, top, and back of the head, are black, except that there are some white spots in the former; and a broad white line over the eyes surrounds the whole. The cheeks and throat are white; the neck is of a cinereous olive-colour; the middle of the feathers on the back, as well as the coverts of the wings and tail, are olive, the edges of the wings being of a dull deep yellow; and the quill-feathers are brown, except the exterior side of the first feather, which is white. The tail is composed of twelve brown olive-coloured feathers, barred with black near their ends, and tipped with white. The breast and sides are a dull orange; and immediately above them runs a white line, bounded by a very narrow black one. The belly is black; the thighs and vent-feathers are white; the legs are a yellowish

D O V

green; and the toes are dusky. The colours in the female are generally more dull than those in the male; the white line over the eye is smaller; the crown of the head is mottled with brown and white; the transverse white line on the breast is wanting; and the belly is mixed with black and white.

Dotterels inhabit Lincolnshire, Cambridgeshire, and Derbyshire. On Lincoln Heath, and on the moors of Derbyshire, they are migratory, appearing in small flocks about the latter end of April, and continuing only till the middle of June; during which time they grow very fat, and are esteemed delicious food. In April and September, they frequent the Wiltshire and Berkshire downs; but their breeding-places, as well as their winter retreats, are totally unknown.

The Dotterel, which is an extremely simple animal, is sometimes taken in the night-time by candle-light. If the fowler stretches out an arm, the bird also expands one of its wings; and if he moves a foot, the Dotterel does the same: in short, this silly bird imitates its insidious enemy to the utmost of its power, while he is busied in spreading the net for its destruction. However, since the universal use of fire-arms, this mode of catching Dotterels has been discontinued, as proving too tedious; and, at present, the sportsman watches the arrival of his prey, and dispatches it with his fowling-piece.

DOTTEREL, SEA, or TURN-STONE; the *morinella tringa* of Linnæus. This bird frequents the Cornish coasts. The bill is straight, black, near an inch long, thick at the base, sharp at the point, somewhat depressed, and pretty hard. The upper part of the body, except the back, which is white, and the top of the breast, are of a brown colour; the lower parts, except the breast, are of a snowy whiteness; and on the rump there is a large transverse black mark. Near the joint of the wings there is a white spot; the lower parts of the tail-feathers are white, and the upper black; and the legs are short, and of a saffron colour.

DOUC. A species of monkey peculiar to Cochinchina. It grows to the size of the baboon; and has a very long tail, and a flat face like that of the ape. It likewise resembles the American monkey, in having no callosity on its posteriors. Thus it appears in some measure to unite these different genera of animals, and to link the monkeys of the old continent with those of the new.

DOVE. A beautiful genus of birds, distinguished from the pigeon tribe only by the diversity of their names, all of them deriving their origin from the Stock-Dove; the English name implying the stock or stem from which the other domestic kinds have been propagated.

Stock-Doves breed either in the holes of rocks, or in excavated trees of the forests. All other birds of the pigeon kind, like rooks, build their nests in the most towering branches: but this species generally resides in artificial cavities; and, from the united allurements of ready provisions and a numerous society, easily submits to the human species. Still, however, it preserves its native hue for several generations; and becomes more variegated only in proportion as it deviates from the original simplicity of its sylvan colouring.

DOVE, RING. This bird is called *columba palumbus* by Linnæus, *palumbus torquatus* by Aldrovandus and others, and *phassa* by the Greeks. Its beak is yellow; its feet are naked and red; and

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its legs are feathered almost down to the feet. The head, the back, and the coverts of the wings, are of a blueish ash-colour; the lower side of the neck and the breast are a purplish red dashed with ash-colour; the upper part of the neck is adorned with a very regular and beautiful white circle, from which the bird receives its name; and the whole neck, both above and below it, is delightfully variegated with changeable colours, according to the light in which they are viewed. The belly is a dirty white; the greater quill-feathers are dusky, the rest being cinereous; and beneath the bastard-wing there is a white stroke which points downwards.

The Ring-Dove being the largest bird of its kind in Britain, is easily distinguished by its size. It weighs about twenty ounces; its length is eighteen inches, and its breadth thirty. It seldom flies singly, but in large flocks; and it subsists on ivy-berries and other vegetable substances. These birds build their nests in the branches of trees; but all attempts to domesticate them have hitherto proved ineffectual. About the commencement of the winter season they assemble in large flocks, and desist from cooing; but they pair again about the beginning of March.

DOVE, TURTLE. This is a very beautiful little bird of the pigeon kind, found in several parts of England, but particularly in the western counties. The head, neck, and back, are, like the common pigeon, of a blueish grey colour, with an admixture of a reddish brown near the rump and at the bottom of the neck; the belly is white; the breast and throat are a fine vivid purple, except that the verge of each feather is yellow; and the sides of the neck are variegated with a sort of ringlet of beautiful white feathers having black bases. The tail is about three inches and a half long, the two middlemost feathers being dusky brown, and the others black with white tips; and the extremities and outer webs of the exterior feathers are wholly white. The irides are a fine yellow; and a beautiful crimson circle encompasses the eye-lids. The chin and forehead are whitish; and on each side of the neck there is a spot of black feathers prettily tipped with white.

This bird weighs about four ounces. It feeds on hempseed, and other vegetable substances; and, being remarkably shy, breeds in the most retired situations. It is faithfully attached to its mate, even to a proverb; and, if we may credit the opinion of the vulgar, when either of them pays the debt of nature, the survivor lives in a state of solitude ever after.

DOVE, TURTLE, INDIAN, OF ALDROVANDUS. The female of this species is entirely white, except the feet, which are red; and the bill, which is black; and the male is wholly of a light red colour, and of the size of the common pigeon. The irides are of a reddish saffron hue; and a narrow black ring surrounds the neck.

DOVE, TURTLE, INDIAN, OF HERNANDEZ. This species is somewhat bigger than the sparrow. The upper part of the body is brown, except that the feathers are edged with black; the fore-parts of the wings are partly black, and the others of a dusky colour; the end of the tail is tinged with white and brown promiscuously; and the feathers which cover the lower part of the body are white, terminating in black lines. The head is small; the bill is black; and the legs and feet are whitish. These birds, which frequent mountainous situations, usually grow very fat, and are esteemed delicious food.

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DOVE, TURTLE, OF BARBADOES. This bird is about the size of the lark; and, from its resemblance to the Indian Turtle-Dove of Hernandez, is by many naturalists supposed to be the same. The irides are of a golden hue; and all the feathers on the upper part of the body are of a darkish ash-colour, with lunated blackish edges. The primary-feathers of the wings appear reddish when the bird is in the act of flying; the tail is a dusky ash; the feathers on the belly are white, with dusky edges, in the shape of a crescent; and the feet are white.

DOVE, GREEN-WINGED. This species, which is a native of the East Indies, is one of the most beautiful of the Dove kind. The bill, which is nearly an inch in length, is of a scarlet colour from the point to the nostrils, and of a pale blue from the nostrils to the head. The eyes are darkish; and from the forehead, which is white, proceed two lines of the same colour above the eyes towards the hinder part of the head. The crown of the head is blueish; the sides of the head, the neck, and the breast, are rosaceous; the belly is of a dirty orange hue, which insensibly blends itself with the rose colour of the breast; the upper sides of the wings, when viewed in certain lights, display a beautiful green, and in others assume the tinge of bright copper or gold; the larger quills are a dirty black; the shoulder or ridge of the wing is marked with small white spots; the sides under the wings are of the same colour with the belly; the covert-feathers are a dark cinnamon; the interior webs of the quills are in some parts tinged with a common cinnamon; but, in others, with a dusky black. The middle of the back is a dirty brown; the lower part of the back, and the feathers which cover the tail, are cinereous; the middle feathers of the tail are black, and the outer ones cinereous, with black tips; the legs and feet are reddish; and the claws are a light brown.

DOVE, LONG-TAILED. The head of this bird is small in proportion to the body; the neck is of a moderate length; the body is pretty long; the tail is longer than the whole body; the wings are of a middling length; the bill is a little incurvated at the point, of a light horn colour about the nostrils, and darker towards the point; the irides are dark; and a white line runs from the corner of the bill to the eye, which it encircles. The fore-part of the head, both above and beneath the bill, is yellowish, the hinder part being a light pigeon blue; which colours lose themselves in each other when united. There is a pretty large black spot exactly under the ear-holes; the fore-part of the neck and breast are of a blossom-colour, changing gradually towards the belly into a clay; the lower part of the belly, the thighs, and the coverts under the tail, are a dull yellow with an admixture of cinereous; the superior part of the neck, the back, and the upper sides of the wings, are a dark, dirty brown; the scapular feathers between the back and wings, as well as some of the quills and coverts next the back, are marked at their ends with oval black spots of different magnitudes, in number about ten or twelve on each side. The rump, and the feathers which cover the tail, incline more to an ash-colour than the back and wings; the middle feathers of the tail are black, and very long, the side ones gradually diminishing in length; so that the exterior feathers on each side are not above half as long as the middlemost, but are of a blueish ash-colour, having bars of black near their tips; the tips themselves are white; the legs and feet,

DOVE

as is common in the Dove kind; are red; and the claws are brown. The extreme length of the tail, which is shaped like that of the magpie, is the most singular feature in this species, which appears to be a native of the West Indies.

DOVE, TRANSVERSE STRIPED. This bird is one of the smallest of the Dove kind. The bill, which is shaped as in the rest of the pigeon tribe, is of a light horn-colour; from the nostril to the eye, and round the latter, runs a narrow white stroke; the irides are a blue grey; the forehead round the eyes, the cheeks, and parts under the bill, are light blue; the crown and hinder part of the head are red, or rather russet; the fore-part of the neck, the breast, the belly, and the thighs, are a faded rose or blossom-colour; the feathers under the tail are white; the sides of the neck, and of the body under the wings, are blueish, thick set with very fine transverse lines of a darker hue; the upper side of the back, the neck, the wings, and the tail, are cinereous; the hinder part of the neck, the back, and covert-feathers of the wings, are marked with very distinct black transverse lines, which are continued from wing to wing across the back, with small interruptions; the greater quills are somewhat darker than the coverts of the wings; the tail is more dusky than the body, its tip, for about an inch deep, being white; the legs and feet are a pale red; and the claws are brown. This Dove, which is a native of the East Indies, was first described by the accurate Edwards, who copied it from a living subject in the possession of Sir Charles Wager.

DOVE, GREENLAND. This bird seems to be a species of diver, or the *colymbus grylle* of Linnæus. The bill is an inch and a half long, straight, slender, and black; on each wing there is a large bed of white, which in young birds is spotted; and, except the tips of the lesser quill-feathers, and the interior coverts of the wings, which are white, the rest of the plumage is black. In winter it is said to change to white; and a variety, spotted with black and white, is frequently seen in Scotland. The tail is composed of twelve feathers; and the legs are red.

These birds, which are always seen hovering over the sea except during their breeding season, frequently elude the skill of the best marksman, on account of their dexterity in diving under the water. The Welsh denominate this bird the *casganllongwr*, or the sailor's hatred, from a superstitious notion that its appearance always indicates an approaching storm. It visits the isle of St. Kilda, one of the Hebrides, in the month of March; and constructs its nest under ground, where it lays one greyish egg, marked with cineritious spots.

DOVE, BROWN INDIAN. This bird, which is about the size of the small white Dove, is commonly bred in a cage. The bill is of a dusky black colour; the circle round the eyes is a very bright scarlet inclining to gold; beyond which there is a fine blue inclosure, which joins to the corners of the mouth, and terminates backwards in angles a little behind the eyes. The fore-part of the head, the neck, and the breast, are a light yellowish brown; and the hinder part of the head and the neck are a darker brown. Beneath the ears, on each side, there is a long black stroke transversely placed, and composed of very short plumage, the feathers beneath these marks having a greenish and golden lustre by turns when viewed in different lights; and the remainder of the hind-part and sides of the neck have a purplish gloss.

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The upper part of the back, the covert-feathers of the wings, and some of the dorsal quills, are a dark reddish brown, varying sometimes to a blueish cast; the greater quills are black, with lighter coloured tips; the middle quills are of the same hue, with pretty deep white tips; and the coverts of the quills have also deep tips of white, which form an oblique transverse bar. The insides of the wings, the belly, and the covert-feathers under the tail, are a light blueish ash-colour; the lower part of the back, and the upper covert-feathers of the tail, are a dark ash-colour; the two middle feathers of the tail are of the same brown hue with the back and wings; the other feathers on each side are a dark cinereous colour, with white tips about an inch deep; the legs and feet are covered with red scales; and the claws are brown. The Brown Indian Dove is a native of the East Indies.

DOVE, VIOLET, RED-HEADED, OF SONNERAT. This species, which inhabits the isle of Antigua in the Oriental ocean, is about the size of the pigeon called jacobin by French naturalists. A fleshy membrane of a vivid red colour extends on each side of the head from the base of the bill beyond the eye, which it encircles; the top of the head is covered with a fine plumage which forms a kind of bright red cap; the neck, the top of the back, and the beginning of the breast, are a blueish grey, which becomes more bright on the lower part of the breast; the back, the belly, the wings, and the tail, have the appearance of black velvet, which changes to purple, and reflects a blueish tinge; the feet and beak are grey; and the irides are composed of a large red circle, and one more narrow which is grey.

DOVE, GREEN, OF SONNERAT. The head of this species, which is about the size of the European wood-pigeon, is of a greyish cinereous hue, and the neck a bright lilach. There is a large orpine-coloured spot on the breast; the coverts of the wings are an apple green encompassed by a longitudinal yellow streak on the outer side; the greater quills of the wings and the tail are black; the belly is a yellowish green; the beak is short and greyish; the irides are a sky-blue surrounded with a reddish circle; and the feet are of a dull golden colour. This beautiful bird, which is a native of the isle of Luçon, was first described by Sonnerat in his Voyage to New Guinea.

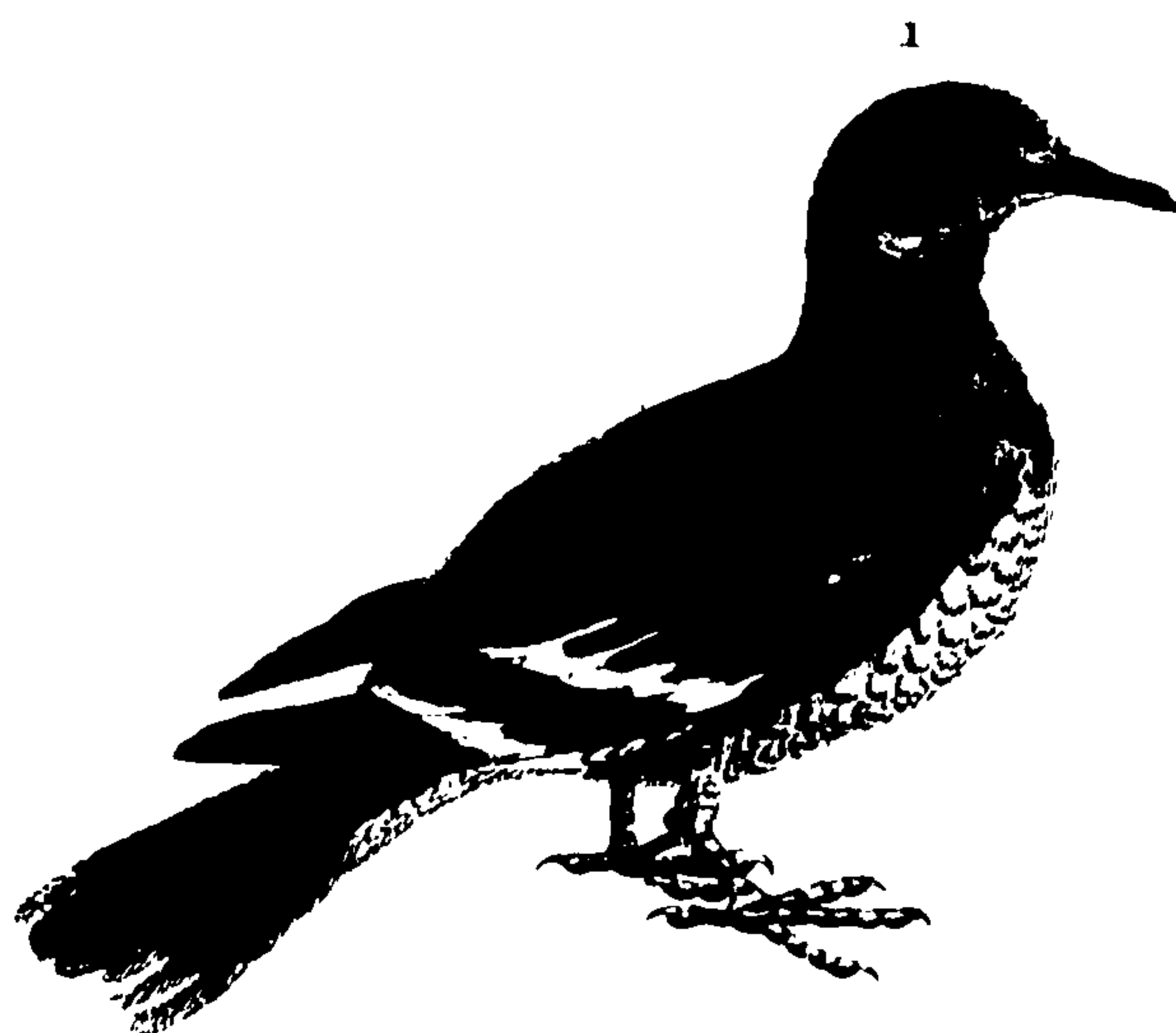
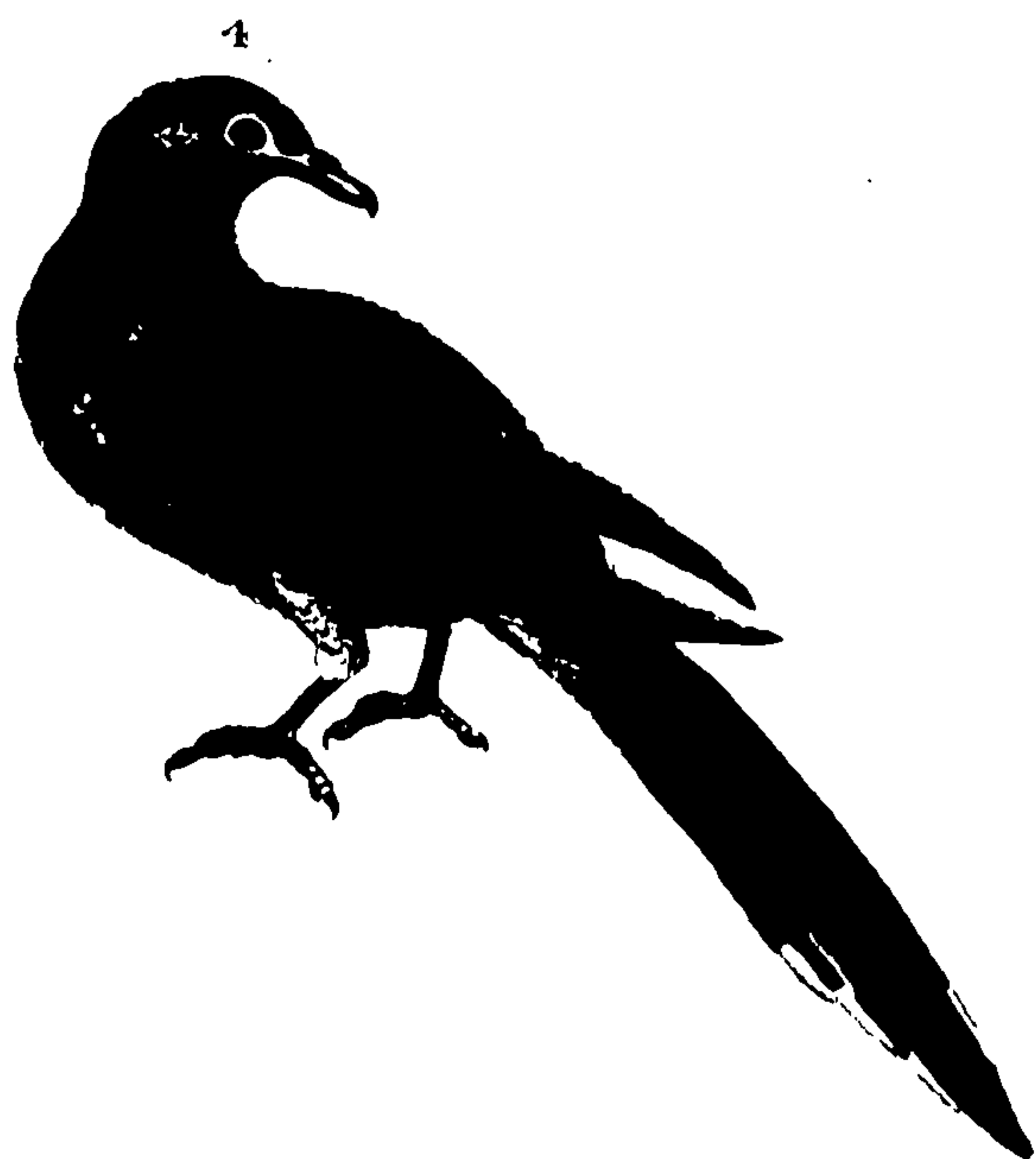
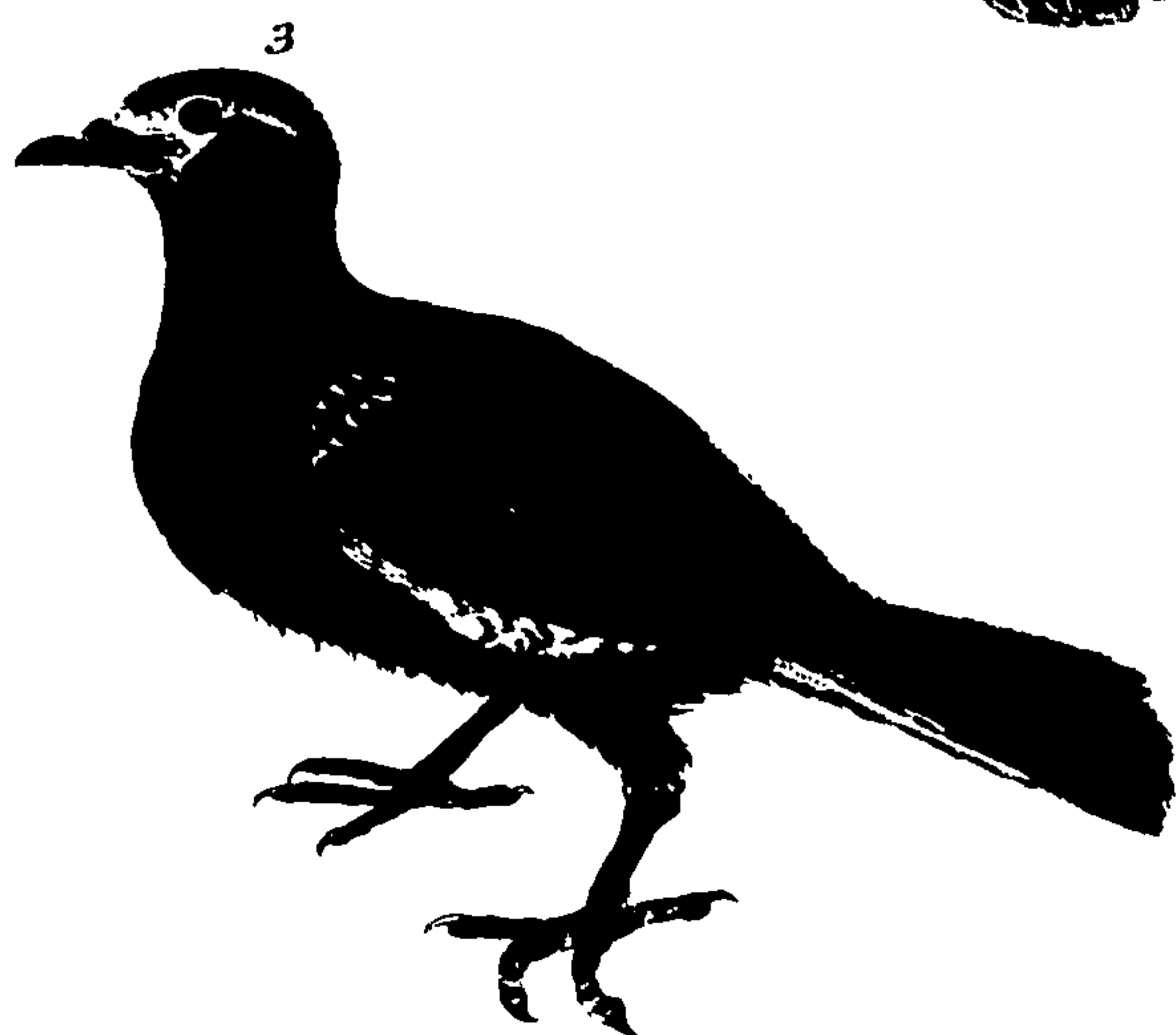
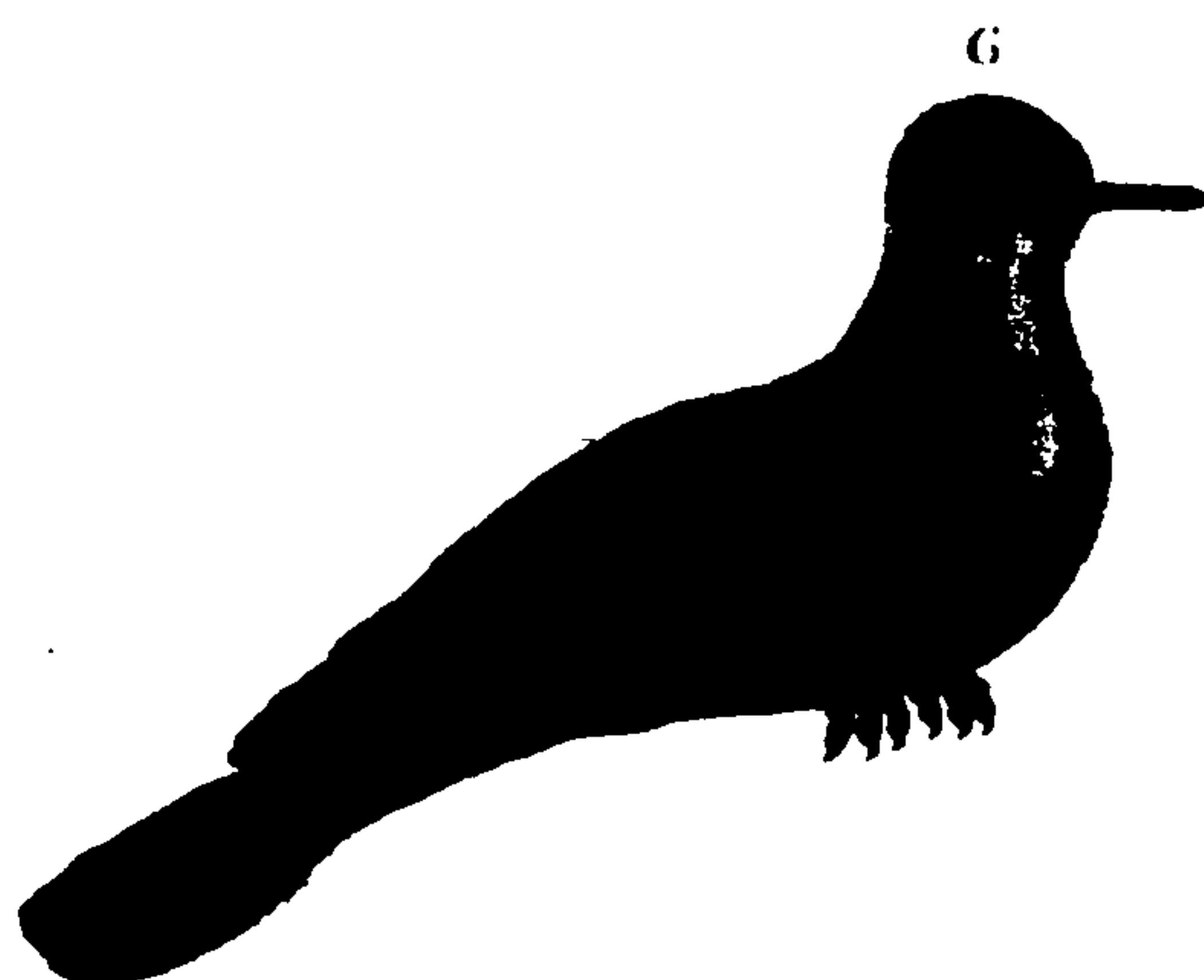
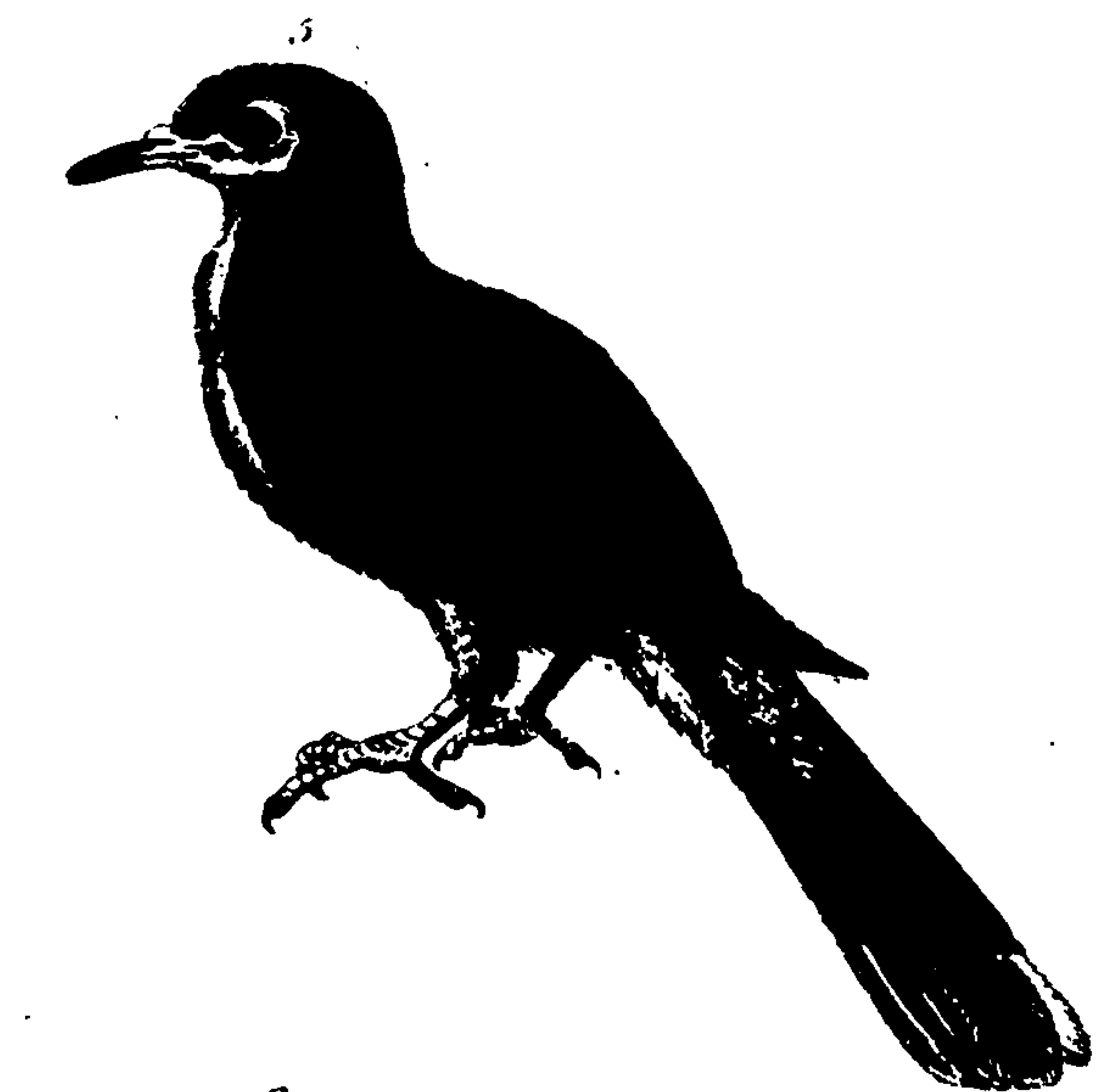
DOVELLA. An appellation given by some naturalists to the fish called *donzellina* by the Italians; and, according to Artedius, a species of the *labrus*; which author distinguishes it by the name of the variegated *labrus* with two large teeth in the upper jaw.

DOZELLINA. An appellation given by some naturalists to the common *mustella*, known in England by the names of the sea-loche and whistle-fish.

DRACÆNA. A species of American lizard.

DRAGON. A fabulous animal which credulity has represented under the similitude of a serpent with wings and feet. The ancients have given a variety of descriptions of this imaginary creature, and ascribed to it very numerous and contradictory qualities; to all which they were probably led by some extraordinary animals of the serpent kind, whose singularity, size, or figure, attracted their attention, and gave scope to their invention.

DRAGON-FLY. A numerous genus of four-winged flies, belonging to the order of *neuroptera* in



1 BROWN INDIAN DOVE 2 GREEN DOVE 3. GREEN WINGED DOVE 4 LONG TAILED DOVE
5 TRANSVERSE STRIPED DOVE 6 VIOLET RED HEADED DOVE

in the Linnæan system; and known in England by the name of Adder or Dragon Flies. The characters are these: they are furnished with jaws; the antennæ are shorter than the thorax; the wings are extended; and the tail of the male is terminated by a kind of hooked forceps.

These insects are the most various as well as most beautiful of all the Flies which either adorn or diversify the face of nature; they are of green, blue, white, crimson, and scarlet colours: in some a variety of the most vivid tints are united; and even all the combinations of shades to be found in the rainbow are sometimes exhibited in one single animal. They are easily distinguished from all other insects by the length of their bodies, the largeness of their eyes, and the beautiful transparency of their wings. In summer, they are seen flying with great rapidity near almost every hedge and stream: they sometimes settle on the leaves of plants, when an attentive observer may contemplate their beauties; and at other times they continue on the wing for hours together, without discovering the smallest signs of lassitude. Though there are various species of this genus, they all agree in the most striking parts of their history; and therefore one general description will suffice to display the nature of the whole.

All these Flies are produced from eggs deposited in the water, where they remain for some time without any seeming life or motion. They are ejected from the female in clusters resembling bunches of grapes; and, sinking to the bottom by their specific weight, continue in that state till the young ones acquire strength sufficient to break their shells, and to separate from each other. The form under which they first indicate signs of animation is that of a six-legged worm, which bears a strong resemblance to the Dragon Fly in it's winged state, except that the wings still remain concealed within a sheath peculiar to this animal, folded up into each other; while all the colours and varieties of painting appear transparent through the skin. After quitting the eggs, these animalcules continue in the water, where they creep and swim about with a kind of deliberate motion. Being very quick-sighted, they instantly descend to the bottom on the smallest approach of danger; in which situation they subsist on soft mud, and whatever glutinous or earthy substances come in their way.

On the arrival of that period in which the transformation of this insect from it's reptile to it's flying state commences, it withdraws from the liquid element to some dry situation, among grass, wood, or stones, where it fixes it's acute claws with great firmness, and for a short time remains wholly immoveable, as if contemplating it's approaching change. Soon afterwards, the skin first divides itself on the head and back, from which opening the real head and eyes appear; and, lastly, the six legs; while, in the mean time, the hollow slough of the legs continues to adhere to it's place. The inclosed animal then creeps forwards by degrees, disengaging first it's wings, and then it's body, from the surrounding skin; and, proceeding a little farther, again rests for some time as if divested of locomotion. The wings, which before were moist and folded, begin gradually to expand themselves, and to smoothe those plaits which are placed against each other like a closed fan. The body is likewise insensibly extended, till each of the limbs acquires it's proper size and dimensions; all which

surprising and difficult operations are effected by the energy of the blood and the circulating humours.

The insect being at first incapable of using it's new wings, it is therefore under the necessity of remaining in the same place till it's limbs are dried by the surrounding air. However, it is soon capacitated to enter on a more noble sphere of life than it had hitherto enjoyed; and, from creeping slowly, and living accidentally, it now wings the air, and selects it's food from the various stores of nature. Indeed, no animal is more amply fitted for motion, subsistence, and enjoyment, than the Dragon Fly; in order to which, nature has furnished it with two large eyes, which occupy almost the whole space of the head, and resemble shining mother-of-pearl. It has four expansive wings, with which it can turn itself with prodigious velocity; and, in order to assist these, it is furnished with a very long body, which directs it's motions after the manner of a rudder.

The wings of these insects being long, and their legs short, they seldom walk, but are generally observed either at rest or in the act of flying: for this reason also they always alight on dry branches or shrubs; and, when they have sufficiently refreshed themselves, pursue their erratic way. Thus they adorn the most delightful season of the year with a profusion of beauty, lightly traversing the air in a thousand directions, and expanding their most charming tints to the beams of the sun. The gardens, the forests, the hedges, and the rivulets, are animated by their sports; and perhaps there are but few individuals, whose early years have been spent in the country, who have not at intervals amused themselves with the pursuit of some of these beautiful insects. But while they appear to us so idly and innocently employed, they are in reality the greatest tyrants of the insect tribes; and, like the hawk among other birds, are only perambulating the aerial regions in quest of prey. They are among the strongest and most courageous of all winged insects; nor is there one, however large, that they will not attack, and frequently with success: the blue-fly, the bee, the wasp, and the hornet, are their constant prey; and even the butterfly, with all it's expansion of wing, is often arrested by them, and sacrificed without mercy. Their appetite seems to be unbounded; they spend whole days in pursuit of other insects; and have been frequently known to devour three times their own bulk in the space of a single hour. When flying, they dart suddenly on their prey, seize it with their six claws, and easily tear it to pieces with their teeth, which are capable of inflicting very dangerous wounds.

However, male Dragon Flies do not continue on the wing for the sole gratification of the appetite of hunger; they are also extremely lascivious, desiring the females with great ardour. When the vernal sun begins to warm the face of nature with his genial beams, the males are assiduously employed in seeking their mates, and no sooner does a female appear, than two or three males pursue her, and endeavour to captivate her by all the little arts and kindnesses of which they are capable. The instrument of generation in the male is very differently situated from that of any other insect, being placed immediately under the breast, and consequently, at first view, appearing wholly incapable of coming in contact with the sexual part of the female; which, as in other insects, lies in the tail. To effect this junction, however, a great deal

taught the male a very peculiar mode of procedure: and Homberg, of the Parisian Academy, who has furnished us with many remarkable particulars relative to these animalcules, thus describes the whole process of this strange contact. 'As soon as the male perceives his mate, and finds himself sufficiently near, he seizes on the back of her head by surprize; and darting his claws into it, twists his forky tail round her neck, and in this manner fixes himself so very firmly and closely, that no efforts of the female can disengage him. In vain does she fly from one branch to another; he obstinately maintains his hold, often for two or three hours successively. When he flies, she is also constrained to fly with him, but he appears to be the sole director of the way; and though her wings seem to be in motion, she is nevertheless guided solely by his movements. As yet, however, the business of impregnation is unaccomplished, for to this the female must contribute. Wearied with importunity, she seems at last to comply; and, inclining the end of her tail to that part of the male's breast in which the instrument of generation is placed, both members meet, and the eggs of the female receive the necessary fecundation: in the space of an hour or two afterwards, she flies to some neighbouring pool, in order to deposit them; and in this situation they continue in a reptile state for a whole year; after which they assume the beautiful colours of the winged parent.'

Linnæus, with his accustomed precision, divides Dragon Flies into the middle-sized, the small, and the great species; in each of which classes he describes several varieties.

DRAGON FLY, with a silky, shining body, and wings of a yellowish dusky colour; termed by Ray the middle-sized libella with a blueish green body, and dun wings without spots. This insect, which frequents the sides of rivers, is of a blueish colour inclining to black; and the wings are a yellowish brown, without any of those specks on their external edges which are usually seen in the other kinds.

DRAGON FLY, with a blue shining body, and wings of a blueish green, dusky at the points, and without spots on the edges; called by Ray the middle-sized libella with a blue body, and the greatest part of the wings of a blackish blue colour. This species, which frequents rivers, is in figure like the former, except that the wings are a blackish blue, with pale brown tips; and that the tail is corneous at the extremity.

DRAGON FLY, with a greenish blue body, dusky wings, and white spots on their edges; called by Ray the middle-sized libella with a green body, and wings of a dun-colour marked with small white spots near the extreme angle. The body is a lucid green; the feet are black; and the wings are brown, and marked on their edges with white oblong spots. Some naturalists have supposed this insect to be the female of the preceding species.

DRAGON FLY, with a silky shining body, and the wings of a dusky gold colour marked with black spots; termed by Ray the middle-sized libella, with a body partly green, and partly blue; and the wings marked in the middle with very large blueish black spots. The body is a bright blue; the feet are black; half of the wings next the point are a blueish black; the points are a gilded brown; and the other half of the wings near the base are a gold-colour.

The foregoing species are all of the middle size. The following are of the small class.

DRAGON FLY, with a silky body, and the wings marked on their edges with dusky spots; called by Ray the lesser libella with reticulated wings, a green back, and whitish furrows. The back of this insect, which flutters on the sides of marshes, is of a copper colour; the wings, which shine as if gilded, and are marked on the edges with rhomboidal brown spots, are composed of two nerves peculiar to this species; the breast, belly, and sides, are of a livid colour; the eyes are cinereous, but brown above; the head, as far as the back, is of a copper hue; and the antennæ are black, short, and clubbed at the last joint.

DRAGON FLY, with a flesh-coloured body, and wings having dusky spots on their edges; termed by Ray the middle-sized libella, with two black spots near it's incisures. This species greatly resembles the preceding both in size and shape; but near the furrows of the belly there are black lines or characters, and brownish spots on the edges of the wings.

DRAGON FLY, with a silky body, and the edges of the wings marked with black spots; called by Ray the libella with a blueish livid body. The wings of this species are white; and the upper part of the body is of a greenish shining blue.

DRAGON FLY, with a blue body variegated with cinereous, and black spots on the edges of the wings; named by Ray the lesser libella with short wings, and a blue body marked with transverse black spots. The size and shape of this insect resemble those of the preceding; but the wings are white; and the joints of the belly, when viewed before, are cinereous; but, when seen behind, of a shining blue.

The following are of the large class of Linnæus.

DRAGON FLY, with double spots on the edges of the wings; called by Ray the greatest libella, with a long, shining, slender, smooth, greenish belly, at the beginning, but becoming more tumid near the end. This species is distinguished from all the others by two spots on the wings, which are white, except towards their bases, where they are yellow, and underneath them of a blackish hue.

DRAGON FLY, with white wings, but yellow at their bases; termed by Ray the greatest libella, with a broad, short, yellow belly. This insect is yellow on the back, and black underneath; and on each side there are two oblique yellow lines. The forehead is green; the eyes are grey; the feet are black; and the wings, at their bases, are milk-coloured.

DRAGON FLY, with a dusky body and white wings; called by Ray the greatest libella, with a yellow, narrow body; but having no dusky spots at the bases of the wings. The body of this species is black, the wings are white, with reddish brown spots on their edges, and the vent is destitute of any appendage.

DRAGON FLY, with yellow sides and white wings. This variety is commonly seen sporting on the water. The sides of the breast and belly are of a yellow colour; and the specks on the edges of the wings have a brown ruddy hue.

DRAGON FLY, with a green shining body, and low lines, pale wings, and a dusky belly; called by Ray the great libella with a short blue belly. The head and breast are of a lucid green colour; the eyes are brown; there are two yellow lines on the

Sides of the breast; the wings are a whitish yellow at their bases; and the marginal spots are brown.

DRAGON FLY, of a gilded green colour, with pale wings and black feet. This species resembles the former, except that the tail of the male is denuded, that of the female being composed of leaves shaped like lances.

DRAGON FLY, with yellowish wings, the sides of the breast marked with yellow lines, and the tail comprised of two leaves; called by Ray the libella with a long slender body and yellowish wings. As to any farther description of this species, naturalists are silent.

DRAGON-FISH. The Dragon-Fish, which is a species of the trachinus or cottus, is commonly known in England by the name of the weever, which seems to be a corruption of the French *la vive*; so called, according to Bellonius, from it's being capable of subsisting a considerable time out of it's native element. It frequently grows to the length of twelve inches. The irides are yellow; the under jaw is longer than the upper, sloping very much towards the belly; and the teeth are small. The back is straight; the sides are compressed; the belly is prominent; the lateral line is even; and the covers of the gills are armed with very strong spines. The first dorsal fin is composed of five very strong spines, which, as well as the intervening membranes, are tinged with black; and the second consists of several soft rays, commencing just at the end of the first, and continuing almost to the tail. The pectoral fins are broad and angular, and the ventral small; the vent is placed remarkably forward; the anal fin extends to a small distance from the tail, and is a little hollowed in the middle; the sides are longitudinally marked with two or three dirty yellow lines, and transversely by numbers of small ones; and the belly is of a silvery hue.

The qualities of the Dragon-Fish seem to have been well known to the ancients, who have enumerated them without exaggeration. The wounds inflicted by it's spines, which are exceedingly painful, are sometimes attended with a violent inflammation and most pungent shooting; and, at others, with very malignant symptoms. According to the opinion of the vulgar, these disagreeable prefaces do not originate from the small wound which this fish is capable of inflicting, but a certain venom proceeding from the animal itself. Whether this opinion is founded in truth or conjecture, we have not been able to ascertain. In order, however, to a cure, some fishermen rub the part affected for a considerable time with sea-sand, and others, with stale urine warmed: but should the wound become dangerous either from the neglect or constitutional infirmities of the patient, the application of sweet oil, and the internal use of opium and treacle, are judged expedient.

This fish buries itself in the sand, leaving only it's nose uncovered; and, notwithstanding the foregoing noxious quality ascribed to it, the flesh is reckoned pleasant and salubrious.

DRAGON-SHELL. An appellation given by the virtuosi to a species of concamerated patella, or limpet. The top is much bent, and externally cinereous, but internally of a bright and elegant flesh-colour. It is frequently found sticking to the back of a tortoise, as common limpets adhere to the sides of rocks; and some have been found affixed to large shells of the pinna marina brought from the East Indies.

DRAGONET. Linnæus has given this genus the name of *callyonymus*, a fish mentioned by several of the ancients; but their descriptions of it are so very incomplete, as to render it impossible to determine with certainty what species they intended. The ingenious Pliny makes it synonymous to the *uranoscopus*, very frequent in the Italian seas, but extremely different from our Dragonet, which term is used to express the *dracunculus* of Rondoletius and others. This fish is found as far north as Norway and Spitzbergen, and as far south as the Mediterranean seas; but it is frequently caught on the Yorkshire coasts; and is sometimes found in the stomach of the cod.

DRAGONET, COMMON. This species, to which Pennant gives the epithet of *gemmesus*, grows to the length of ten or twelve inches. The body is slender, round, and smooth; the head is large, and depressed at the top; and in the hind-part there are two orifices, through which it breathes, and ejects the water received by it's mouth after the manner of setaceous fishes. The apertures of the gills are closed; and on the end of each of the bones which covers them there is a very singular trifurcated spine. The eyes are large, and placed near each other on the superior part of the head; the pupils are of a rich sapphirine blue colour, and the irides a fiery carbuncle. The upper jaw projects much farther than the lower; the teeth are very minute; and the mouth is uncommonly large. The pectoral fins are roundish, and of a light brown hue; and the ventral ones, which are placed before them, are very broad, and consist of five branched rays. The first ray of the dorsal fin is setaceous, and extends almost to half the tail; but the rays of the second dorsal fin are of a moderate length, except the last, which is protruded far beyond the others. The anus is situated near the centre of the belly; the anal fin is broad, of which the last ray is the longest; the tail, which is rounded and long, consists of ten rays; the lateral line is straight; and the membranes of all the fins are extremely thin and delicate. The colours of this fish, which are yellow, blue, and white, exhibit a very beautiful appearance: the blue in particular is inconceivably splendid, and glows with a brilliancy little inferior to that of the diamond.

Pontoppidan calls this species the flying fish; but whether it makes use of any of it's fins to raise itself out of the water, as he seems inclined to believe it does, we have not been able to determine with certainty.

DRAGONET, MEAN. This species is greatly inferior to the former with respect to the beauty of it's colours; being of a dirty yellow hue, mixed with white and dusky spots; and the belly is entirely white. It grows to the length of six inches and a half. The head is compressed; the forehead slopes down to the nose; the eyes are large, and almost contiguous; the mouth is small; and the teeth are very minute. Over the gills there is a strong broad trifurcated spine; the first dorsal fin has four rays, and the second ten; the pectoral fins consist of twenty rays of a ferruginous colour spotted with a deeper tinge of the same; and the ventral of five broad branched rays, resembling those of the common Dragonet. The anal fin, which is white, has ten rays; and the tail has the same number. In both species they are trifurcated at their extremities; and the ray next the anal fin is very short in both.

DRAGOON. The name of a small bird of the

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the carrier-pigeon kind, called by Moore *columba tabellaria minima*. It seems to be a mongrel breed between the tumbler and the horseman species. This race increases prodigiously; and as it is lighter than the horseman, it is supposed to fly several miles with more expedition, though the former outstrips it at last. One of these pigeons, it is said, flew from St. Edmundsbury to London, being seventy-two miles, in the space of two hours and a half.

DRILL. An appellation given by Purchas to the ourang-outang, or wild man of the woods. See **APE, GREAT.**

DROMEDARY. An animal of the camel kind, from which it is distinguished by having only one bunch on it's back. It's hair is soft to the touch, and shorter than that of the ox, except on the head, throat, and top of the neck, where it is considerably longer. On the middle of the back also there are hairs nearly a foot in length, which, though naturally soft and flexible, yet standing in an erect posture, form the most conspicuous part of the bunch; but, when removed by the hand, the flesh scarcely appears more prominent than on the back of the hog. The head is small in proportion to the body; the upper lip is divided like that of the hare; the feet are each terminated by two small claws; and the soles of the feet are broad, very fleshy, and soft to the touch, though the skin is extremely hard and callous. There are callosities on the knees, the shoulders of the fore-legs, and on each of the hinder ones; and besides these, another much larger adheres to the breast, on an eminence which seems formed by nature to support it: these callosities appear as if intended for the support of the animal's ponderous body when it either stoops to rest or to be loaded. The stomach is very large; and, as in other ruminating animals, is divided into four parts: but it's structure is extremely singular; for, at the upper end of the second ventricle, there are several square holes, which are the orifices of a great number of bags placed between the membranes which compose the stomach; and these seem to be the receptacles of water kept for emergencies; the creature drinking a vast quantity at once, and then subsisting for several days, on particular occasions, without any other fluid.

Dromedaries being naturally very swift, they are frequently trained by the Arabians to racing, and sometimes to carry messengers with dispatches, who, by their means, can travel upwards of one hundred miles daily, for nine days successively, over burning deserts impassable by any other animals.

DRONE. The name of a large kind of bees, supposed to be the males of the swarm, which being unprovided with the necessary apparatus, never go in search either of wax or honey, but live on the stores collected by the rest. The common working-bees are generally considered as being neutral: and there is usually only one female in a hive; for, from numerous recent experiments, there is reason to conclude that the queen bee only lays two kinds of eggs, namely, such as are to produce Drones, and those from which the working-bees are to proceed.

This larger species of bees, called Drones, may be easily distinguished from the working tribes, by being nearly double their size. Their heads are round, their eyes are full, their tongues are short, and their bellies are broader and more obtuse than

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those of the other classes: they are also of a darker hue, and make a louder noise in flying, by which they may be distinguished though unseen; and they are destitute of stings, which the honey-bees are universally known to possess.

On dissecting a Drone bee, there appear the most incontestible proofs that it belongs to the masculine gender. In this creature there is no appearance either of ovaries or eggs, nor any traces of the internal conformation of the labouring bees; but the whole abdomen is filled with transparent vessels, winding about in various sinuosities, and containing a white or milky fluid plainly anomalous to that found in the males of other animals, which is destined to impregnate the eggs of the females: and this whole apparatus of vessels, which bears a strong resemblance to the convolutions of the seminal vessels in other creatures, is evidently intended for the preparation and retention of this matter till the appointed time of it's emission. At the extremity of the last ring of the body, in the female, and in the working-bees, is placed the aperture of the anus, from which the stings of the latter are also protruded: but, with respect to the Drone, or male bee, the case is very different; for the extremity of that ring is closed, and the aperture of the anus is situated in the under part of it, about it's middle. On squeezing the body of the Drone, the penis is also forced out at this opening; which member is a small, slender, fleshy body, contained between two horns of a somewhat harder substance, which unite at their bases, but gradually diverge as they increase in length. When the pressure is long continued, there are thrust out at the same aperture some of the seminal vessels, and finally part of the milky fluid is extravasated; but this seems rather to flow from some lacerated vessel, than from any natural evacuation. These parts observed in all Drones, and in no other kind of bees, seem satisfactorily to evince the difference of sex. But one thing farther deserves to be remarked, namely, that though the penis evidently appears from the effect of pressure, it is with difficulty discovered on dissection; the reason of which seems to be their swelling when exposed to the air: and the penetrating Swammerdam supposes that, in order to this end, these members are furnished with a great number of tracheae, which readily admit the air as soon as they are exposed to it's effects.

But though Maraldi, as well as Swammerdam, discovered in the structure of Drones some resemblance to the male organs of generation, and from thence referred them to the masculine gender; neither of these accurate and ingenious observers could ever notice them in the act of copulation: and the latter, for that reason, entertained a notion that the female, or queen bee, was fecundated without copulation; that it was sufficient for her only to approach the male; and that her eggs were impregnated by a kind of vivifying aura exhaled from the body of the male, and absorbed by that of the female. However, Reaumur imagined that he had discovered the actual copulation of the Drone with the female bee, and accordingly minutely described the process in his History of Insects.

Notwithstanding these observations, many of the ancients, as well as the moderns, have imagined that the eggs of the female bee are not impregnated with the male sperm, while in the ovaria of the insect; but that they are deposited, unimpregnated, in the cells, and that the male afterwards

wards ejects the male sperm over them, in the same manner as the generation of fishes is performed by the male's impregnating the spawn after it is emitted by the female. Maraldi, indeed, long since conjectured that this might be the case; and he was confirmed in his supposition by observing that a liquid whitish substance surrounded each egg at the bottom of the cell in a short time after it had been deposited; and that a great number of eggs, which had not been bedewed with this liquor, remained barren in the cells.

This method of impregnation has lately been established, beyond all contradiction, by the observations of Mr. Debrow of Cambridge. That gentleman having put some bees into a glass hive, together with a large number of Drones, observed, on the first or second day from the time that the eggs were deposited in the cells, which the queen generally lays on the fourth or fifth after being hived, that a great number of bees affixed themselves to each other, and formed a kind of curtain from the top to the bottom of the hive, probably in order to conceal the process of generation: however, he soon perceived several bees, whose size he was able to distinguish, inserting their posteriors, each into a cell, and sinking into it; but in a short time they retired, when he observed a small quantity of whitish liquor left in the angle of the base of each cell, containing an egg; which liquor was less liquid than honey, and possessed no real sweetness. In order to a farther elucidation of the fact, that the eggs were thus fecundated by the males, Mr. Debrow pitched on a swarm; and having separated the Drones, by shaking all the bees into a vessel full of water, and there leaving them till they were become quite senseless, replaced the working animals, together with their queen, as soon as they were recovered, by spreading them on brown paper, placed in the sun, within a glass hive. The queen very soon laid her eggs; some of which, at the end of twenty days, were hatched into bees; others withered away; and several of them were encrusted with honey. Suspecting that some of the males, having escaped his notice, had impregnated only a certain part of the eggs, he was anxious to ascertain the fact; and, to that end, he removed all the brood comb which was in the hive, and determined to watch the motions of the bees after new eggs were deposited in the cells. On the second day he perceived the operation commence; and, on taking out a piece of the comb containing two of the bees which had thrust their posteriors into the cell, he examined them, and found that they were destitute of stings; and on dissecting them, by the assistance of a microscope, he discovered the four cylindrical bodies, containing the whitish fluid previously mentioned, which Maraldi observed in the large Drones.

On a subsequent experiment, this gentleman having separated from the same parcel of bees all such as were destitute of stings, he found no less than fifty-seven of the number exactly of the size of common bees; which having pressed to death between his fingers, they yielded a small quantity of whitish liquor; after which he placed the remainder of the swarm in the hive. On the fourth or fifth day, the queen bee deposited the eggs in the cells, but no part of the process of impregnation could be discovered: the eggs, after the fourth day, instead of changing in the manner of caterpillars, remained in their original state, except that some of them were covered with honey; all

the bees forsook the hive, and attempted to get into another place in its vicinity, probably in quest of males; but the queen lost her life in this unequal conflict.

Mr. Debrow afterwards made another experiment, which may be considered as absolutely conclusive on this subject. He placed a certain part of the unimpregnated brood-comb under a bell glass, in which he confined a queen, and some common bees unaccompanied by any Drones; and the other part he put under another glass bell, with a few Drones, a queen, and a number of common bees. In the former glass the eggs remained in the same state, without any signs of impregnation; and when the bees were released on the seventh day, they all flew away. The Drones, in the other glass, were observed to impregnate the eggs in every cell on the first day after they were put in; the bees remained in the hive; and, in the space of twenty days, every egg underwent the necessary transformations, and a numerous young colony was thus produced.

It has long ago been observed, both by Maraldi and Reaumur, that there are Drones of the same size with the common bees; but the late curious and interesting experiments of Mr. Debrow, besides ascertaining this fact, have thrown new light on their importance and utility, and removed considerable difficulties which had obscured the process of generation among those animals. It is well known, that the larger Drones never appear in the hive before the middle of April; and that, before the end of August, when the principal breeding season terminates, they are no more, being destroyed, together with all their worms or nymphs, by the labouring bees, probably on account of saving the honey: and yet it is equally certain, that the bees begin to breed early in the spring, provided the weather is favourable; and that many broods are completed before the Drones appear. But if the smaller-sized Drones are suffered to remain, which in times of scarcity consume less honey than the others, they answer the necessary purposes of impregnating the early broods, and the larger Drones are produced against the season of pleasure and plenty. On the other hand, these smaller Drones are all dead before the end of May, when the larger ones appear to supersede their utility.

DRONE-FLY, or BEE-FLY. This insect so greatly resembles the common bee, that at first sight they are not easily discriminated. There are, however, several distinguishing characteristics between the species: the Drone-Fly has only two wings; and its body is shorter and thicker, and its head considerably larger, than those of the common bee. The Bee-Fly also invariably carries its wings parallel in their position, but without its body; whereas the bee usually crosses its wings on its back, and covers its body with them: however, this is not an universal practice with respect to the wings of the bee, though it is certainly a very common one. The Bee-Fly frequents flowers as well as the bee; and though it refrains from the labour of collecting wax, it is furnished with a trunk by which it absorbs honey: this trunk, which enables it to perform the operation, is destitute of teeth; and consequently the insect belongs to Reaumur's first general class of two-winged flies; and the conformation of its body, which is short and flat, refers it to his first subordinate genus of that class.

The most curious and extraordinary period of the life of this insect, is that which it passes before commencing a denizen of the sky. The usual exterior form of the fly-worms of this genus was long ago sufficiently known to the generality of naturalists; but they declined troubling themselves with any minute investigation of it, and appear indeed to have been ignorant that these creatures possessed several peculiarities worthy of attention. The substances among which they are found are the most offensive and nauseous; and the insects, in this state, belong to the class of those with variable heads. But their grand distinction from all others consists in their long and slender tails, which at different periods appear of distinct lengths; yet they are invariably longer than their bodies, round, smooth, extremely small at their extremities, and somewhat resembling those of rats; whence the whole class has sometimes received the appellation of rat-tailed worms.

But, in order to understand the essential properties of their tails, it is necessary first to acquire a knowledge of the worms themselves. These creatures having been usually found on dry ground, and only accidentally observed for a great number of years, prepossessed mankind with a notion that they were far less numerous than they really are; nor had any idea occurred that they inhabited the water. However, on examining vessels of that fluid in a corrupted and stinking state, they have been there found in great numbers, lying among the mud at their bottoms; and, on being removed, and immersed in water of a purer nature, they have soon evinced the necessity and utility of their long tails.

Notwithstanding these worms are capable of living in mud under water, it is certain that they are under a necessity of inhaling fresh air, like other water fly-worms: and to this essential purpose their long tails contribute; for while they lie buried in the soil, these members are extended upwards to the surface of the water; and, having apertures at their extremities, the air is thereby admitted into the bodies of the insects. It is, indeed, very amusing to observe these animals, after being put into water, quickly descending to the bottom, and as speedily thrusting up the extremities of their tails to the outside. From the circumstance of their being able to reach the surface, though from whatever depth, we may rationally conclude that they are endowed with the faculty of extending their tails at pleasure to any length: and the way to ascertain this conclusion seems very easy, namely, by increasing the depth of the water; for, as the worms delight to lodge at the bottom, if they are inclined to remain, they are speedily compelled to lengthen their tails proportionably, in order to breathe from the surface. A repetition of this experiment will prove that each of these worms is capable of stretching its tail to the length of five inches; an amazing extent for a creature whose body is not above half an inch; and the tail of which, in its natural state, does not much exceed that length. However, five inches is the utmost exertion of any one of these insects in this action; and when the water in the vessel is rendered deeper, they either quit the bottom, and crawl up the sides to a proper height, or else continue to swim at the depth of five inches.

The organization of so remarkable a part of this animal as its tail, cannot but appear to the curious as an object worthy their attention; and the natural transparency both of that and of the body of

this insect, must greatly facilitate the examination. Indeed, with respect to many of the younger of these worms, and such of them as have not arrived at that state in which they quit the water, the parts are almost as easily distinguishable within the body as if placed within a glass tube. It is no difficult matter, in every state of this worm, to perceive that the tail is composed of two hollow tubes; one of which nicely fits, and is easily retracted within the other, or protracted, as the occasions of the animal may require. The exterior, and consequently the larger tube, seems to be an elongation of the fleshy matter which forms the rings of the body: within this there is a smaller tube, chiefly of a blackish brown colour; and, by means of the variation in hue, they may be distinguished from each other even when shut up. The interior tube may with propriety be called the tube of respiration, as it is capable of being lengthened or shortened for that purpose at pleasure; the exterior one serving only for a case or sheath. Nor is this all: it is easily known that these pipes are in themselves capable of extension; by observing, that while the whole interior tube is lodged within the case, it is of no determinate length, but sometimes long, and at others short.

Numbers of the aquatic fly-worms do not quit the water till they arrive at their perfect state; but this kind, as soon as they have acquired their proper growth, leave that fluid, and crawl abroad on the earth. Their bodies, in this new element, become dirty and greenish; and, when they have found a proper spot which is soft and moist, they there insume themselves; and, after undergoing their necessary transformations, burst out in the shape of flies. Their changes are all accomplished under shells of their own skins, which in a few hours begin to harden, and by degrees become very firm; and they are remarkable for each having four horns, two longer and two shorter, placed in different directions near the head, which serve as the organs of respiration to the inclosed nymph.

There are several species of this genus of flies, no less different in their sizes than in the worms from which they are produced: the largest of these are found in vaults and privies; and in winter vast numbers of them take up their abodes in the hollows of willows, and other trees which grow contiguous to rivers and marshes.

DRONTE. See DODO.

DUCK. A very large genus of birds of the order of anseres. The characters are these: the beak is shorter in proportion than that of the goose, strong, flat or depressed, and commonly furnished with a nail at the extremity. The feet are proportionably larger than those of the goose kind, the middle toe being the longest; the legs are shorter, and placed farther backwards; the back is flatter; and the body is more compressed. The nostrils are small and oval; and the tongue is broad, the edges near the base being fringed. There are numerous species of this genus; some inhabiting the fresh water, and others the sea.

DUCK, TAME. Tame Ducks are reared with more facility than perhaps most other domestic animals. The very instincts of the young direct them to their favourite element; and though they are sometimes hatched and conducted by hens, they seem to contemn the admonitions of their leaders; which circumstance evinces that all birds receive their manners rather from nature than education. The falcon does not pursue its prey because it is thus taught

D U C

taught by the parent, but from the importunate cravings of its appetite for animal food; the cuckoo follows a very different way of life from that which its nurse is capable of teaching it; and birds of the Duck kind in particular follow their appetites rather than their tutors, and attain their various perfections without the help of any guide. The arts of man, indeed, are the result of accumulated experience; while those of inferior animals are generally self-taught, and unacquired by imitation.

Duck-eggs are usually placed under a hen, because that animal is supposed to hatch them better than the original parent. The Duck generally proves a heedless, inattentive mother; for she frequently leaves her eggs till they become corrupted, and even seems to forget that she is entrusted with the charge: she is equally regardless of her young brood when they are produced; for she only leads them forth to the water, and then seems to think that she has made sufficient provision for them. Whatever advantages might be secured by drawing near the house, or attending in the yard, she declines them all; and will rather suffer those vermin which usually haunt the waters to destroy her brood, than be at the smallest pains in bringing them to a place of shelter and security. But, on the contrary, the hen, who is an indefatigable nurse, broods with unwearied assiduity, and generally brings forth a chicken from every egg with which she is entrusted: she does not indeed conduct her young to the water, because that is contrary to her nature; but she always keeps a watchful eye over them when they stand on the brink. Should the rat or the weasel attempt to seize any of them, the hen affords them instant protection; and, leading her supposititious brood to the house when tired with paddling, there nourishes them with all the instinctive ardour of maternal regard.

There are no fewer than ten different varieties of the Tame Duck; and Brisson enumerates upwards of twenty of the wild. The most obvious distinction, however, between wild and Tame Ducks, lies in the colour of their feet; those of the Tame being black, and the wild yellow.

The common species of Tame Ducks derive their origin from the mallard, and may be traced to that fowl by unerring characters. Though the drakes vary in colour, they all retain the curled feathers of the tail, and both sexes the shape of the bill, peculiar to the wild kind. Nature, indeed, seems to sport with the colours of all domestic animals, that mankind may with more facility distinguish and claim their respective property.

The mallard is usually about twenty-three inches in length, thirty-five inches in breadth, and about two pounds and a half in weight. The bill is of a yellowish green colour; and the head and neck are a deep shining green. A circle of white furrounds the lower part of the neck, to about three-fourths of its circumference; the upper part of the breast, and the beginning of the back, are a purplish red; the breast and belly are grey, marked with transverse speckled lines of a dusky hue; and the scapulars are white, elegantly barred with brown. The spot on the wing is a rich purple grey; and the tail is composed of twenty-four feathers. The male of this species is distinguished by four middle feathers, which are black and strongly curled upwards; but the female is destitute of them. Their plumage is a pale reddish

D U C

brown, spotted with black; and their legs are saffron-coloured.

Tame Ducks are extremely beneficial to mankind; and by no means chargeable, as they subsist on lost corn, worms, snails, and other insects. They lay a great number of eggs annually; and, when sitting, require no manner of attendance, except that of throwing small quantities of barley at times within their reach: and with respect to Ducklings, they may be fattened in the space of three weeks with any kind of pulse or grain, and plenty of water.

The vessels of the Duck, especially about the heart, are constructed in so particular a manner, as to enable it to live a considerable time, in the act of diving under water, without respiration. This peculiarity induced the ingenious Mr. Boyle to consider it as a more proper subject for experiments, by means of the air-pump, than any of the feathered tribe: accordingly, a full-grown Duck having been put into the receiver of that instrument, of which she filled a third part, and the air exhausted, the creature appeared at first to sustain the operation better than a hen, or any such fowl, could possibly have done; but, after the lapse of one minute, she evidenced strong signs of discomposure; and, in less than two more, her head dropped, and she appeared in a dying state till revived by the admission of a certain portion of air. Thus, whatever facility of diving the Duck and other aquatic fowls may possess, it does not appear that they can subsist without the means of respiration any longer than other animals. A young callow Duck was also tried in the same manner, and experienced the like effect, namely, that of being almost suffocated in less than two minutes. But it ought to be remarked, that both of the foregoing birds swelled so prodigiously, on the pumping out of the air, as to appear much larger, especially about their crops, than they were naturally. It not being the seeming intention of Nature that any water-fowl should subsist in an exceedingly rarified air, but only continue occasionally under water; though she has furnished them with faculties capable of performing the latter, she has left them utterly impotent with respect to the former.

One of the most convincing instances of the Duck's being calculated to live in every situation, with respect to some of its varieties, may be drawn from the history of the blind Ducks of the lake Zirchnitzer, in Carniola. It is now well known that this lake communicates with another underground in the mountain Savornick, and is filled or emptied according to the quantity of water contained in the last; the waters of the superior lake running off by vast holes in its bottom. The Ducks, which are there very plentiful, are often carried down with the stream, and forced into the subterraneous lake by the strength of the vortex; in which unnatural situation many of them unquestionably perish, but those which remain alive become blind, and lose all their feathers; and, at the next filling of the lake, both they and vast quantities of fish are thrown up with the water. At this time they are very plump; and, being destitute of sight, and consequently incapable of avoiding danger, they are caught with facility. In the space of fourteen days, they recover their sight and their plumage, and are then of the size of the common wild Duck, and of a black colour, excepting a white spot on each of their foreheads. When opened immediately on their emerging from the subterraneous

subterraneous lake, their stomachs are found to contain numbers of small fishes, on which they must necessarily have subsisted during their continuance in that situation.

Duck, Wild. The difference between Wild Ducks arises principally from their size and the nature of those places from whence they derive their subsistence. The sea Duck, which frequents the salt water, and often amuses itself with diving, has a broad bill pointing upwards, a large toe behind, and a long blunted tail; but the pond Duck has a straight and narrow bill, a small hind toe, and a sharp-pointed tail. Decoy-men give the former the appellation of the foreign Duck; but the latter is supposed to be a native of England.

The several varieties of Wild Ducks imitate our domestic breed in associating together in flocks during the winter, flying in pairs in the summer, rearing their young by the water-side, and conducting them to their food as soon as they are protruded from their shells. They usually build their nests among heath or rushes, at a small distance from the water; and generally lay twelve or more eggs before they begin to sit. But though this is their usual method of procedure, their dangerous situation on the ground sometimes induces them to shift their habitations; and accordingly their inartificial nests are at times seen exalted on the tops of trees: these stations, however, must infallibly be attended with much trouble and difficulty, especially as the bills of Ducks seem but ill adapted for constructing nests with such durable materials as are capable of resisting the inconstancy of the weather. The nests thus elevated are generally composed of long grass mixed with heath and lined with feathers; but, in proportion as the climate becomes colder, they are more artificially constructed, and provided with warmer linings.

In the arctic regions, all birds of this genus are at incredible pains in protecting their eggs from the inclemencies of the weather: the gull and the penguin tribes, indeed, seem to disregard the most intense cold peculiar to those climes; but the Duck forms a hole for herself; shelters the approach to it; lines it with a layer of grass and clay, and another of moss within that; and, lastly, a warm covering of down or feathers.

As these fowls possess the faculties of flying and swimming, they are principally birds of passage, and probably perform their journies across the ocean as well on the water as in the air. Those which visit this country on the approach of winter are seldom either so fat or well-flavoured as the Ducks which continue with us the whole year; their flesh is often very lean; and it has generally a fishy taste, which disagreeable flavour it probably contracts during the journey; the food of these birds in the Lapland lakes, from whence they descend, being generally of the insect kind.

As soon as they arrive in this island, they fly about in search of proper winter residences; in the choice of which they seem to have two objects in view, namely, plenty of food, and security from interruption. To this end, they prefer lakes in the vicinities of marshes and thickets, where insects are most plentiful: a pool, therefore, which has a marsh on one side, and a wood on the other, is seldom without vast quantities of wild fowl; where a few have once fixed their residence, numbers are induced to settle; and Ducks flying in the air are often allured down from their heights by the loud voice of the mallard from below. Nature seems

to have endowed this bird with very particular faculties for this purpose: the wind-pipe, where it begins to enter the lungs, opens into a kind of bony cavity, from which the sound is reverberated as in a musical instrument, and heard at a great distance: to this call all the stragglers resort; and, in a very short time, a lake which before was altogether destitute of such inhabitants, appears covered with water-fowl that have left their Lapland retreats, in order to associate with the natives of this island.

Wild Ducks generally prefer those parts of a lake which are most inaccessible to the fowler, where they all appear as if huddled together, and extremely busy and clamorous. In what sort of employment they are occupied for whole days together, it is not easy to conjecture; where they sit and cabal thus, it seems impossible for them to find food, being generally the very centre of the lake; and as to courtship, the season of love is not then arrived: all of them, however, appear to be loaded with industry; nor does a single individual among them seem to be one moment at rest.

They frequently move off privately by night, in order to feed in the adjacent meadows and ditches, which they are afraid to approach by day: during these nocturnal adventures, many of them are often captured; for, though naturally timorous, they are easily deceived, and caught by means of springs. The greatest quantities, however, are taken in decoys, which are well known in Lincolnshire, the great magazine of wild fowl in this kingdom, as well as in Somersetshire, and some other counties. These decoys are thus prepared and conducted. A proper spot is pitched on at a distance from any public road, as well as from houses and noise. A decoy is most eligible where there is a large pond surrounded by a wood, and beyond that a marshy and uncultivated country. The place being chosen, the water must, if possible, be surrounded with willows, unless the woods naturally shade it in every direction. On the south and north side of the pond, two, three, or four ditches or channels, should be made, broader towards the water, and gradually narrowing till they terminate in a point: these channels should be covered over with nets, supported by hooped sticks bending from one side to the other, so as to form a vault or arch growing narrower and narrower to the point, where it should be terminated by a tunnel net; along the banks of these netted channels many hedges should be made of reeds slanting to the edges of the gutters, their acute angles being towards the side next the pool; and the whole apparatus should also be concealed from the pool by a marginal hedge of reeds, behind which the operations of the fowler are conducted.

Matters being thus settled, the fowler, who is provided with a number of Ducks termed decoys, which are rendered tame by education, and accustomed to attend their master on being summoned by a whistle, sets them to feed at the mouths of the pipes. No sooner does the evening commence, than the *decoy rises*, to use the language of fowlers, and the wild fowl feed during the night. Should the evening be still, the noise of their wings during their flight is heard at a considerable distance, and produces no displeasing sensation. The fowler, whenever a fit opportunity offers, and he sees his decoy covered with fowl, walks about the pond, and observes into what pipe or channel the assembled Ducks may be enticed or driven with the greatest facility: then throwing hempseed,

DU C

or some similar allurements which will float on the surface, at the entrance of the pipe, and along its extent, he whistles to his Decoy-Ducks, which instantly obeying the summons, approach, in expectation of being fed as usual; whither also they are followed by a whole flock of the wild ones, unsuspicious of their meditated ruin. However, their sense of smelling being extremely acute, they would speedily discover the ambuscade, did not the fowler hold a piece of burning turf to his nose, against which he constantly breathes, and thereby prevents the effluvia of his person from affecting their very exquisite senses. The Wild Ducks, therefore, in pursuing the decoy ones, are conducted by them into the broad mouth of the pipe, without the smallest suspicion of danger, the fowler being still hid behind one of the hedges: nevertheless, when they have proceeded a short way up the pipe, and perceive it to grow narrower, they begin to apprehend danger, and endeavour to return; but in this attempt they are prevented by the fowler, who now makes his appearance at the broad end below. Thus surprized, intimidated, and utterly unable to rise because of the surrounding net, the only remaining way of escape seems to be through the narrow-funnelled net at the bottom; into which they fly, and are instantly taken.

It frequently happens, however, that the wild fowl will not follow the Decoy-Ducks; and, on such occasions, a little dog, regularly bred to the business, is employed in running backwards and forwards between the reed-hedges, in which there are apertures suited both to the vision of the fowler and the passage of the animal. This circumstance attracts the notice of the wild fowl; which, prompted by curiosity, advance towards the dog, who continues playing among the reeds, but still nearer and nearer to the funnel, till he has allured the Ducks too far for recession.

It sometimes also comes to pass, that the dog does not attract the attention of the fowls till a red handkerchief, or some other thing very singular and shewy in itself, is tied round him: nor do the Decoy-Ducks ever enter the funnel-net with the rest, being trained to dive under water as soon as their companions are entrapped.

The general season for catching wild fowl in decoys is from the latter end of October till February; and, by an act of George II. a penalty of five shillings is incurred for every such bird caught at any other period. Decoys, in Lincolnshire, are usually let at a certain annual rent, from five to thirty pounds a year: these principally supply the London markets with wild fowl; and upwards of thirty thousand Ducks, widgeon, and teal, are said to have been sent up, in the course of one season, from ten decoys in the vicinity of Wainfleet.

To the above account of the method of catching wild fowl in England, it may not be unentertaining to subjoin another still more extraordinary one frequently practised in China. Whenever the fowler spies a number of Ducks settled in the water, he puts off two or three gourds from the land, that they may float among them; which being excavated, always swim on the surface. The fowls, at the first, appear to be somewhat shy in approaching them; but as the most terrific objects, when constantly presented to the view, gradually become more and more familiar, so the Ducks at length gather round the gourds, and amuse themselves with whetting their bills against them. The fowler now hollows out one of these gourds sufficiently

DU C

large for the admission of his head; and, after making perforations in it proper for breathing and seeing through, he places it on his head. Thus accoutred, he wades slowly into the water, suffering nothing but the gourd to be perceived above the surface; and in that posture he moves imperceptibly towards the Ducks, which appear unsuspicious of the smallest danger. At last, however, getting into the middle of the flock, he seizes one of them by the legs, draws it instantly under the water, and fastens it under his girdle; from whence he proceeds to a second, a third, and so on, till he has loaded himself with as many as he can carry away. When he has thus obtained the desired quantity, without either disturbing the rest of the fowls, or the pool itself, he moves slowly off again; and in this manner sometimes visits the flock thrice in one day.

DUCK, EIDER; the *anas molissima* of Linnæus. These very profitable Ducks are found in the Hebrides; but more particularly in Norway, Iceland, and Greenland, from whence vast quantities of their soft feathers, known by the name of Eider down, are annually imported into Great Britain; their remarkably light, elastic, and warm qualities, rendering them a highly-esteemed stuffing for coverlets, especially by those whom age or infirmities have too much enfeebled to support the weight of common blankets.

The Eider Duck is double the size of the common one. The bill is black; the feathers of the forehead and cheeks, by advancing far into the base, form two very acute angles; the forehead is of a deep velvet black colour; from the bill to the hind part of the head, runs a broad black bar, passing across the eyes on each side; and on the hind part of the neck, just beneath the extremity of this bar, there is a broad pea-green mark which has the appearance of a stain. The crown of the head, the cheeks, the neck, the back, the scapulars, and the coverts of the wings, are white; the inferior part of the breast, the belly, the tail, and the quill-feathers, are black; and the legs have a greenish cast. The female is of a reddish brown colour barred transversely with black, except on the head and the upper part of the neck, where she is marked with dusky streaks pointing downwards. The primary feathers are black; the last or greater row of coverts of the wings, as well as the lesser row of quill-feathers, are tipped with white; the tail is dusky; and the belly is a deep brown, marked obscurely with black.

The Eider Duck builds her nest among the rocks or plants which cover the sea-shore, where she lays from six to eight eggs. There is nothing very singular in the external materials of her habitation; but the internal lining, on which she deposits her eggs, is the warmest, softest, as well as lightest, that can possibly be conceived: this inner covering is no other than the down produced from the breast of the bird herself in the breeding season, which she plucks off with her bill, and thus furnishes her nest with a more curious texture than the united art of man is capable of producing.

The natives of these gelid regions exert their utmost industry in discovering the nest of this aquatic fowl; and, after suffering her to lay, rob her both of her eggs and materials. Not discouraged by this first disappointment, the Duck builds another habitation, in which she deposits fresh eggs; and this second mansion, together with its valued furniture, is also removed by the inhabitants. She ventures, however, to build a third time; but then

DUCK

the down with which her nest is lined is supplied from the bosom of the drake: and if this should likewise be plundered, the male and female both relinquish the place for ever.

The down with which the nests of these fowls are lined is separated from the adhering moss and dust by the natives; and though the climate which they inhabit requires extraordinary warm cloathing, their necessities oblige them to exchange this commodity with the indolent and luxurious inhabitants of the south for brandy and tobacco.

DUCK, VELVET; the *anas fusca* of Linnæus. The male of this species is larger than the common Duck. The bill is broad and short, yellow on the sides, and black in the middle; and the hook is red. The head and part of the neck are black tinged with green; behind each ear there is a white spot, and in each wing a white feather. The rest of the plumage is a fine black, and of the soft and delicate appearance of velvet; the legs and feet are red; and the webs are black. The female is entirely of a deep brown colour, the marks behind each ear and on the tail excepted; and the bill is destitute of the protuberance at the base which Linnæus makes the characteristic of the male. This Duck is common to the coasts of Norway; but seldom makes it's appearance in Great Britain except in very severe winters.

DUCK, SCOTER; the *anas nigra* of Linnæus. This species weighs about two pounds and nine ounces; it's length is twenty-two inches; and the expansion of it's wings is thirty-four inches. The middle of the bill is of a fine yellow colour, but the rest of it is black. Both the male and female are destitute of the hook at the extremity; but on the base of the bill of the former there is a large knob, divided by a fissure in the middle. The tail consists of sixteen sharp-pointed feathers, the middlemost of which are the longest. The whole plumage is black, except that of the head and neck, which is glossed over with purple; and the legs are black.

This bird, the *macreuse* of the French, is allowed by the Romish church to be fed on during Lent; but for what particular reason it enjoys this distinguished honour, perhaps all the doctors of the Sorbonne are at a loss to determine. It lives almost constantly at sea, is a great diver, and is taken in nets placed under the water.

DUCK, TUFTED; the *anas fuligula* of Linnæus. This species does not weigh more than two pounds; and it's length is about fifteen inches and a half. The bill is of a blueish grey colour, except the hook, which is black; the head is adorned with a short, thick, pendent crest; the belly and under-coverts of the wings are pure white; but the rest of the plumage is black, varied about the head with purple. The tail, which consists of fourteen feathers, is short; the legs are a blueish grey; and the webs are black. The female has no crest. When young, she is of a deep brown colour; and the sides of her head next the bill are a pale yellow; but, in other respects, she exactly resembles the Duck in maturity.

DUCK, SCAUP; the *anas marila* of Linnæus. This bird is smaller than the common Duck. The bill is broad, flat, and of a greenish blue colour; the head and neck are black glossed with green; the breast is black; the back, the coverts of the wings, and the scapulars, are beautifully marked with numerous narrow transverse black and grey bars; the greater quill-feathers are dusky, the

DUCK

lesser being white tipped with black. The belly is white; the tail and feathers, both above and below, are black; the thighs are barred with dusky and white strokes; and the legs are dusky. Willughby supposes that these Ducks derive their name from feeding on Scaup, or broken shell-fish. Their colours are so exceedingly various, that, in a large flock, hardly two of them are to be found alike.

DUCK, GOLDEN-EYE; the *anas clangula* of Linnæus. The length of this species is nineteen inches, and the breadth thirty-one; the weight being about two pounds. The bill is black, short, and broad at the base; the head is large, and of a deep black hue glossed with green; and at each angle of the mouth there is a large white spot. The irides are a bright yellow; the superior part of the neck is of the same colour with that of the head; the breast and belly are white; and the scapulars are black and white. The tail, the back, and the coverts on the ridges of the wings, are black; the first fourteen quill-feathers, and the four last, are black; the seven middlemost are white, as well as the coverts immediately above them; and the legs are orange-coloured. The head of the female is a deep brown tinged with red; the neck is grey; the breast and belly are white; the coverts and scapulars are dusky and cinereous; the middle quill-feathers are white; the remainder, together with the tail, are black; and the legs are dusky.

These Ducks, which frequent both salt and fresh waters, are, during the winter season, frequently caught in the Shropshire meres.

DUCK, BURROUGH, or SHIELDRAKE; the *anas tadorna* of Linnæus. The male of this elegant species measures two feet in length; the expansion of the wings is three feet and a half; and the weight is two pounds and a half. The bill is of a bright red colour, swelling at the base into a knob, which appears most conspicuous in the spring; the head and upper part of the neck are a fine blackish green; the lower part of the neck is white; and the breast and superior part of the back are surrounded with a broad band of bright orange bay. The coverts of the wings and the middle of the back are white; the nearest scapulars are black, the others being white; the greater quill-feathers are black, the exterior webs of the next being a vivid green, and those of the three succeeding an orange. The coverts of the tail, as well as the tail itself, are white, except that the two outermost feathers of the latter are tipped with black. The belly is white, and longitudinally divided by a black line; and the legs are of a pale flesh-colour.

These fowls, which frequent the sea-coasts, breed in rabbit-holes, after having dispossessed the inhabitants. When any attempt is made to seize their young, the old Ducks shew great address in diverting the attention of the fowler from his purpose: they skim along the ground as if in a wounded condition, till such time as their brood have got into places of security; after which they return and collect them together. This instinctive cunning furnished Turner with a plausible reason for conjecturing that the Shieldrake is the *chenalopex* or fox-goose of antiquity; and it is certain that the natives of the Orkneys give this species the appellation of the fly-goose, from an attribute of that quadruped.

These fowls, which lay fifteen or sixteen whitish eggs of a rounded shape, associate together in large flocks during the winter season. Their flesh is extremely rank and disagreeable.

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DUCK, PINTAIL; the *anas acuta* of Linnæus. The neck of this slender bird is long; it's length is twenty-eight inches, it's breadth about three feet two inches, and it's weight a pound and a half. The bill is black in the middle, but blue on the sides; the head is of an iron colour, tinged behind the ears with purple; a white line, bounded with black, extends from the ears a considerable way down the neck; the hind-part of the neck, the back, and the sides, are elegantly marked with white and dusky waved lines; and the fore-part of the neck and the belly are white. The scapulars are striped with black and white; the coverts of the wings are cinereous; the middle quill-feathers are marked on their exterior webs with green, black, and white bars; the outer feathers of the tail are ash-coloured, the two middlemost, being black, and three inches longer than the rest; and the feet are of a leaden hue. The female is of a light brown colour spotted with black.

These Pintail Ducks are found in great abundance in the county of Connaught, in Ireland, during the month of February; and they are highly esteemed for the delicacy of their flesh.

DUCK, LONG-TAILED; the *anas glacialis* of Linnæus. The bill of this species, which is of a moderate size, is short, black at the tip and base, and orange-coloured in the middle. The cheeks are of a pale brown hue; the hind-part of the head, and the neck both before and behind, are white; the sides of the superior part of the neck are marked with large dusky bars pointing downwards; the breast and back are a deep chocolate; and the scapulars are white, long, narrow, and sharp-pointed. The coverts of the wings and the greater quill-feathers are dusky; the lesser are a reddish brown; and the belly is white. The four middle feathers of the tail are black; but two of them, which are nearly four inches longer than the rest, are white; and the legs are dusky.

These Long-Tailed Ducks, which breed in the most northern climates, visit Great Britain only in such winters as are uncommonly severe.

DUCK, POCHARD; the *anas ferina* of Linnæus. The length of this bird is about nineteen inches, it's breadth two feet and a half, and it's weight twenty-eight ounces. The bill is of a deep lead colour; the head and neck are a bright bay; and the breast, and part of the back where it joins the neck, are black. The coverts of the wings, the scapulars, the back, and sides under the wings, are a pale grey elegantly marked with narrow black lines; the quill-feathers are dusky; the belly is cinereous and brown; and the tail, which consists of twelve short feathers, is a deep grey. The legs are of a leaden hue; and the irides are a bright yellow tinged with red. The head of the female is of a pale reddish brown colour; the breast is somewhat deeper; and the belly, together with the coverts of the wings, are a pale cinereous.

These Ducks, which shew an equal partiality to fresh and salt water, are esteemed very delicate food; they are often exposed to sale in the London markets, where they are known by the appellation of the Dun-birds.

DUCK, FERRUGINOUS; the *anas rufa* of Linnæus. This fowl, which is scarcely mentioned by any other naturalist except the above celebrated one, weighs about twenty ounces. The bill is long and depressed, rounded a little at the base, serrated along the edges of each mandible, and furnished with a nail at the end of the superior. The general colour is a pale blue; the head, neck,

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and entire upper part of the bird, is an agreeable reddish brown; the throat, breast, and belly, are of the same colour, but somewhat paler; the legs are a pale blue; and the webs of the feet are black.

Bolton informs us, that a bird of this species was killed in Lincolnshire; and Linnæus says, that the Ferruginous Duck is sometimes, though rarely, found in the Swedish rivers.

DUCK, GADWALL, or GRAY; the *anas strepera* of Linnæus. This species is about the size of the widgeon. The bill is flat, and of a black colour; the head, and the upper part of the neck, are a reddish brown spotted with black; the lower part, the breast, the upper part of the back, and the scapulars, are beautifully marked with black and white lines; the belly is a dusky white; and the rump, both above and below, is black. The tail is cinereous edged with white; the coverts on the ridges of the wings are a pale reddish brown, those beneath being a purplish red, and the lowest a deep black. The greater quill-feathers are dusky; the inner webs of three of the lesser quill-feathers are white, forming a very conspicuous spot; and the legs are orange-coloured. The breast of the female is a reddish brown spotted with black, the back being of the same colour; and though she retains the same spots on her wings, they are far more faint than those of the male.

DUCK, GARGANEY; the *anas querquedula* of Linnæus. The length of this species is seventeen inches, and the expansion of the wings twenty-eight. The bill is of a deep lead colour; the crown of the head is dusky, marked with oblong streaks; and from the corner of each eye issues a long white line pointing upwards to the back of the neck. The cheeks, and the upper part of the neck, are a pale purple, marked with minute oblong lines of white pointing downwards; the breast is a light brown impressed with semicircular black bars; the belly is white; the lower part, together with the vent, are varied with specks; and the bars are dusky. The coverts of the wings are grey; the first quill-feathers are cinereous; the exterior webs of those in the middle are green; the scapulars are long, narrow, and elegantly striped with white, ash-colour, and black; the tail is dusky; and the legs are lead-coloured. The female has an obscure white mark over her eyes; but the rest of her plumage is a brownish ash-colour.

DUCK, BROAD-BEAKED; the *anas clypeata*, or *latirostra*, a species of marine Duck known in England by the name of the shoveller. This fowl is somewhat smaller than the common Duck. The beak is remarkably broad, particularly at the end, where it is rounded and hollowed like a shield; and the edges of each mandible are pectinated, or supplied with thin laminæ, which lock into each other when the mouth is closed. The irides are of a bright yellow colour; the head, and the upper part of the neck, are a blackish green; the lower part of the neck, the breast, and the scapulars, are white; and the back is brown. The coverts of the wings are a fine sky blue, those next the quill-feathers being tipped with white; the greater quill-feathers are dusky; and the exterior webs of the middlemost are a glossy green. The tail is short, and variegated with black and white; the belly is of a bay colour; the vent-feathers are black; and the legs and feet are red. The female has the same marks in her wings as the male, though the colours are less vivid; and the rest of her plumage resembles that of the common wild Duck.

DUCK, MORILLON; the *anas glaucion* of Linnæus.

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næus. This bird, which appears to be the morillon of Belonius, has a yellowish brown bill, golden-coloured irides, and a dusky, rust-coloured head. Round the upper part of the neck there is a collar of white, and beneath it another of grey. The back and the coverts are dusky, excepting a few white lines; the great coverts are also dusky, with some large white spots; the primaries are black; and the secondaries are white. The breast and belly are white; the tail is dusky; the sides above the thighs are black; and the legs are yellow.

DUCK, GREY-HEADED, OF EDWARDS; the *anas spectabilis* of Linnæus. This species has a red-coloured bill, which extends into the forehead on each side, in the form of a broad, flattish bean. The feathers at the root of the upper mandible are black, and run into the base of the bill with three angles; the eyes are surrounded with black feathers, which terminate in a point backwards; the top, and hind-part of the head, are of a light blueish ash-colour; the sides of the head beneath the eyes are a light green; and a line of black spots runs from the eyes down the sides of the head, and divides the ash-colour from the green. The neck and breast are white; the back is a dark brown, or black, with a purplish gloss; the greater quills of the wings and the tail are a dark brown; the tips of the middle quills form a white bar across the wings; the lesser covert-feathers of the wings are brown, but in the middle of the coverts in each wing, there is a plat of white. The breast gradually loses it's whiteness in the belly, which is wholly black; the covert-feathers of the tail, both above and beneath, are a bright shining black; on each side of the tail there is a large round white spot; and the legs and feet are a dirty red. This bird is a native of Hudson's Bay.

DUCK, LITTLE BROWN AND WHITE; the *anas minuta* of Linnæus. This Duck is about the size of the teal, and resembles it pretty much with respect to shape. The bill is black, serrated on the edges, and a little hooked at the point of the upper chap; the feathers round the base, on the upper part, are white; and the bill itself has two angles, which point towards the forehead on each side. A line of dusky white feathers runs between the bill and the eye, and divides the white into spots both above and below the line; a white spot also appears behind each eye; but the remainder of the head, the neck, and the beginning of the breast, are brown. The back, wings, and tail, are a darkish brown, but the covert-feathers of the wings are brightest. The breast, from being brown, gradually becomes white transversely mottled with light brown as far as the thighs; the thighs and lower belly are a lighter and darker brown transversely mixed in broken lines; and the legs and feet are dusky, with a reddish cast before. This fowl, which was first described by Edwards, is also a native of Hudson's Bay.

DUCK, WHISTLING, OF JAMAICA; the *anas arborea* of Linnæus. This species is nearly two feet in length from the tip of the bill to the extremity of the tail. It makes a kind of whistling noise on every occasion; but, what is most extraordinary in birds of this genus, it builds it's nest in trees. The bill, which resembles that of the common Duck, is pectinated at the edges, hooked at the point, and of a dusky colour. The sides of the head are brown; but on the top, which is black, the feathers are very long, and point backwards in the shape of a crest. The hinder part of the neck

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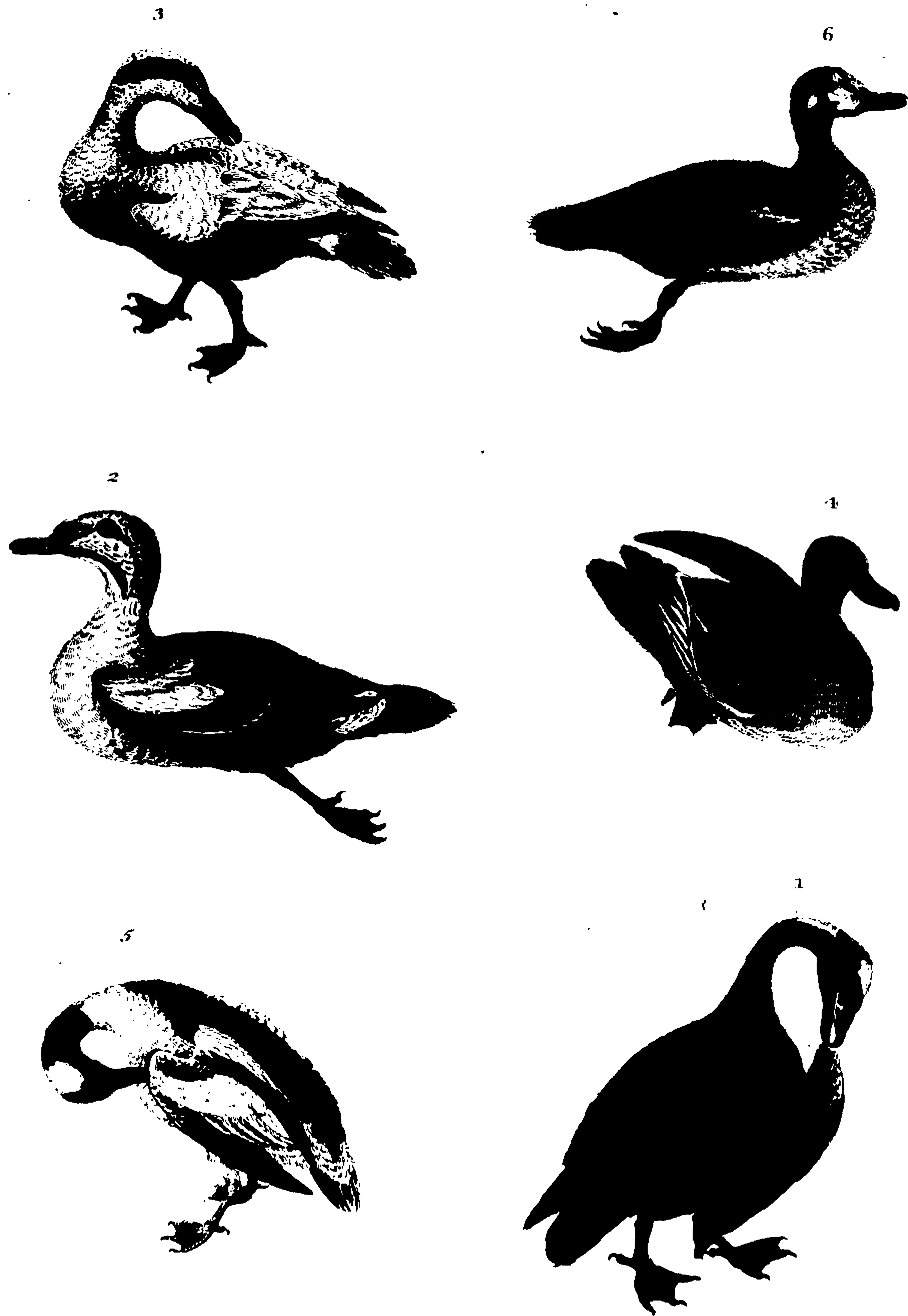
is dusky; but the under sides of the head, neck, and throat, are white. The neck is variegated with small black spots; and the back and upper sides of the wings are brown. The greater quill-feathers are a dark brown; the coverts of the wings have black spots in their middles; the tail, the rump, and the superior coverts of the tail, are black; the breast is a bright reddish brown, spotted with black; and the belly is white, with an admixture of black on the sides and a short way down the middle. The legs are longer than is usual in fowls of the Duck kind, and entirely bare a little above the knee. The three foremost toes are webbed; and there is likewise a lateral web on the side of the inner toe. The legs and feet are covered with lead-coloured scales; and the back toe is placed so very high as scarcely to touch the ground. This Duck is very common in Jamaica.

DUCK, WHISTLING, RED-BILLED; the *anas autumnalis* of Linnæus. This fowl is somewhat smaller than the common Duck, and the neck and legs are longer in proportion: the bill is also shaped like that of the common Duck, of an agreeable red colour, yellowish about the nostrils, and black at the point; the irides are a dark hazel; and the sides of the head round the eyes, and on the throat, are a light cinereous. The crown and hinder part of the head are blackish; and the neck, breast, and back, are of a brick colour. The greater quills of the wings are black, as well as those of the bastard wings which cover their bottoms; the inner quills which fall on the rump are a dark brick; and the first and second rows of coverts next above the quills are white. Immediately above the white there is a bright orange plat; the small feathers on the ridges and joints of the wings, as well as the whole belly, tail, and thighs, are black; the rump and the coverts on the upper side of the tail are also black; and the legs and feet are of a fleshy hue, with black claws. This species is a native of the West Indies.

DUCK, WHITE-BELLIED, OF JAMAICA. This species is about twenty inches long from the tip of the bill to the extremity of the tail; and the expansion of the wings is about thirty inches. The bill is black, and nearly two inches in length; and the tail is three inches. The feathers on the head are mottled with light and dark brown; and the upper part of the neck, the sides under the wings, and part of the belly, are covered with brown feathers crossed with whitish lines. The back is somewhat more dusky than the rest of the body; the tail and wings are a light brown; but some of the shorter prime-feathers are painted with green, orange, and white. The breast, and part of the belly, are white; and the legs and feet are a greenish brown.

DUCK, BARRARY, OR GUINEA DUCK. This bird is larger than the common Duck, but smaller than the goose; and the male is larger than the female. The bill is short, broad, and crooked at the end; there is a crest, or red tubercle, between the eyes, as large as a cherry; and a skin furrounds them which has the appearance of red leather. The flesh has the flavour both of the goose and the Duck. The colour of these fowls frequently varies; some being white, others black, and four of different hues: they are, however, generally black, variegated with other tints.

DUCK, GREAT BLACK; the *anas perspicillata* of Linnæus. This bird, which is a native of Hudson's Bay, is considerably larger than the common Duck. The bill is horizontally compressed to-
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1 GREAT BLACK DUCK 2 GREY HEADED DUCK 3 EIDER DUCK 4 FERRUGINOUS DUCK
5 LITTLE BLACK AND WHITE DUCK 6 LITTLE BROWN AND WHITE DUCK.

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wards the point, indented on the edges, and of a pale orange colour, except in the middle, where it is reddish. In the broad part of the upper mandible next the head, on each side, there is a large square black spot, which projects a little from the bill; a white triangular mark extends from eye to eye on the crown of the head; and on the hinder part of the neck, immediately below the head, there is another longish triangular white spot; excepting which marks, the whole plumage is black, without any reflecting gloss. The insides of the wings, and the under-side of the tail, are less dark than the rest; the legs and toes are a bright red; the three forward toes are webbed together, the inner and hinder ones being furnished with fins; and the webs of the toes and claws are dusky.

DUCK, BLACK-CRESTED. This species weighs about two pounds; its length is sixteen inches, and its breadth two feet three inches. The bill is broad, two inches long, and entirely of a blue colour, except the tip, which is black. The nostrils are large, the space surrounding them being quite bare; the irides are of a golden colour; the ears are small; and the top of the head is a blackish purple. A black crest, about an inch and a half long, depends from the head; the neck, and the superior part of the body, are a deep blackish brown; the wings are short and black, except the four first feathers, which are brownish, and the succeeding ten, which are of a snowy whiteness. The tail, which is very short, is composed of fourteen black feathers; the lower part of the breast, as well as the belly, is white; the feet are a dark blue; and the toes, which are long, have dark membranes between them.

DUCK, DUSKY AND SPOTTED; the *anas histriónica* of Linnæus. This species is about the size of the common mallard. The bill is dusky, indented on the edges, and somewhat hooked at the extremity of the upper mandible. The sides of the head between the bill and the eyes are white; and a line of the same colour extends over the eyes, gradually changing into a reddish orange-colour, and reaching to the hind part of the head. A white spot occupies the place of each ear; and a line of the same colour passes from the hind part of the head, on each side, down the neck. The crown of the head is black, its sides behind the eyes being a purplish blue; and the whole neck, both behind and before, is black. Between the bottom of the neck and the breast there is a white circle continued almost round, the feathers bordering on it, both above and beneath, being a deep black; and between this collar and the wings on each side there is a longish plat of white feathers bordered round with black transversely placed. The back, towards the neck, is a dark purplish blue, and in the middle a dark dirty brown. The rump and the covert-feathers of the tail are a deep black with a blue gloss; the greater quills of the wings and the tail-feathers are a dull blackish brown; the exterior webs of the middle quills are a fine shining blueish purple, the coverts immediately above them being of the same colour with white tips; the inner quills next the back, as well as the feathers which spring from the shoulders, are a blueish ash-colour on the borders of their webs, and white in their middles; the lesser coverts of the wings are cinereous, with a white spot in their middle on each wing; the ridges of the wings above the joints is a reddish brown; and the insides of the wings are a dusky brown. The breast, below the

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circle, is a blueish ash-colour; the belly and thighs are a dull brown inclining to black; the feathers on the sides are a dull orange; and on each side of the tail, where the upper and under covert-feathers meet, there is a white spot. The legs, feet, and claws, are a blueish black; and the toes are webbed and finned.

This bird was brought from Newfoundland; and is described by the ingenious Edwards with his usual accuracy.

DUCK, LITTLE BLACK AND WHITE; the *anas albeola* of Linnæus. This bird is somewhat smaller than the common Duck. The bill is short, and of a dirty black colour; the head is a deep glossy black, except a large white spot, which begins behind the eyes on each side, and unites on the hind part of the head. The black feathers next the bill possess a fine green lustre, those on the crown and the beginning of the neck being more of a purple hue; the neck, a little below the head, is entirely white; and the lower part of it behind, together with the back, are a dull black. The rump and the covert-feathers of the tail are a dirty white; the middle feathers of the tail, which are by far the longest, are all of a dirty brown or blackish hue on their upper sides, but somewhat fainter beneath. The exterior quills of the wings are black; the middlemost have deep white tips; a few of the inner ones next the back are black; and the first row of covert-feathers is black where they fall on the greater or black quills, and white where they cover the white quills. The lesser coverts are white, with an admixture of black round their ridges; from each shoulder issues a plat of white feathers, falling backwards in points between the back and the wings; the neck, the whole under-side of the tail, and the interior covert-feathers of the wings, are white; the legs and feet are a yellow orange; and the claws are black.

This Duck is a native of Newfoundland, where the seamen call it a Spirit, probably from the amazing celerity with which it dives, and again appears at a considerable distance from the place of its immersion.

DUCK, STELLATED. This species is distinguished by its eyes, which are placed higher than usual in an oval black spot; but its principal characteristic is a large white star on its back. The head under the eyes is brown; the bill is black near the base; and the rest of the body is dusky.

DUCK, MADAGASCAR. This bird is larger than the tame Duck. The bill is of a yellowish brown colour; the irides are a fine red; the neck and head are a dusky green; and the back is a deep purple mixed with blue. The edges of the feathers are red; the breast is a deep brown, the edges of its exterior feathers being red; and those on the shoulders are green, except a few whose margins are red. The first row of the covert-feathers is of the same colour, the second being green. The long feathers of the wings are beautified with red edges; and the legs and feet are of an orange hue.

DUCK, HOOK-BILLED; the *anas adunca*, *rostrum incurvato*, of naturalists. This species bears a strong similitude to the common wild Duck; but it differs from it in the conformation of the bill, which is broad at the tip, somewhat longer than that of the common Duck, and bends a little downwards: the head is also smaller, as well as more slender. It generally weighs about two pounds; it measures two feet in length from the tip of the bill to the extremity of the tail; and the

D U C

expansion of the wings is three feet. The upper part of the head and neck are of a dark green colour; having two small white speckled lines, one of which runs from the upper part of the bill over the eye towards the back part of the head, and the other from the bill towards the lower part of the eye, around which there is a circle of beautiful white feathers. The breast, belly, and throat, are white, with small transverse reddish brown spots intersecting them. The first six prime-feathers of the wings are white, the rest being a reddish brown; the first row of the covert-feathers is blue tipped with white, and the second brown with white tips; the scapular feathers of the wings, the sides, and the back, are a reddish brown powdered with white specks; the tail is black, with white tips to the feathers, some of which curl upwards as in the common drake; and the legs and feet are a fine orange.

Duck, Muscovy; the *anas moschata* of naturalists. This fowl, which is the largest of all the Duck kind, is termed the Muscovy Duck, not on account of it's being a native of Muscovy, but from it's strong musky odour. The general colour, both of the male and female, is a purplish black variegated with white: the female, however, is sometimes wholly white. It's beak and feet are red; it has red fleshy protuberances about it's bill and eyes; it's voice is so very hoarse as to be scarcely audible except when the bird is incensed; and it's eggs are remarkably round.

Duck, Bahama. This fowl is smaller than the tame Duck: The head, near the upper jaw, is of a triangular shape and gold colour; the inside of the bill and the lower part of the neck are white; the hind part of the head, the breast, and the belly, are a yellowish ash; the wings are brown; but the middle is green surrounded with yellow; and the extremities are black.

Duck, Summer, of Carolina; the *anas sponsa* of Linnæus. The bill of this bird is red in the middle, and there is a black spot at the extremity. The irides are yellow, with a purple circle; and on each side of the head there are two long feathers apparently divided into hairs of a blueish green colour with a purplish cast and a narrow white border. The feathers on the head are of a violet hue; from each side of the throat, which is white, run several bow-like streaks; and the breast is red spotted with white. Near the small coverts of the wings there are broad black streaks which run across the back; but the upper parts of the wings display a diversity of colours. The tail is blue and purple; and the feet, which are brown, have a reddish cast on their fore-parts.

Duck, Tree, of Louisiana. This species is so denominated from it's perching on the boughs of trees. The plumage is so very beautiful and variable, as scarcely to be imitable by the most skilful painter; the head is adorned with a fine tuft of remarkably vivid colours; and the eyes possess a fiery redness. The feathers of this bird compose some of the most valued ornaments of the natives.

Duck, American, of Louisiana. The feathers of this Duck are almost entirely white; and the sides of the head are covered with fleshy excrescences more red than those of the turkey-cock. The flesh of this bird, while young, is excellent and well tasted; but, when old, it possesses a musky flavour.

Ducker, or Loon, Red-Throated. This fowl is about the size of the tame Duck. The bill

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is about three inches and a quarter in length, straight, narrow, sharp-pointed, and black; the head and sides of the neck are blueish ash-coloured; and the hind part of the neck is white, streaked with longitudinal black marks. The throat is red; the back, the upper parts of the wings, and the tail, are darkly cinereous; the quill-feathers of the wings are almost black, except some of the middle ones, which are tipped with white; the coverts of the wings have white dashes on each side of their shafts near their tips; the interior covert-feathers of the wings are white; the breast, the belly, and the sides under the wings, are white; the sides of the breast are distinctly spotted with longitudinal black lines; and the coverts beneath the tail are white marked with broad confused dusky spots. The legs and feet are dusky, or blackish; the toes are somewhat reddish, and webbed together, as in the Duck kind; the claws are broad and flat like human nails; and the legs, which are placed near the extremity of the body, are very flat.

This bird is a native of Greenland: but, during very severe seasons, it visits more southern climes; and has sometimes, though rarely, been caught in England.

DUCK's FOOT. A species of bivalve shell of the family of the escallop. It is sometimes called the coral.

DUN-BIRD. See DUCK, POCHARD.

DUN DIVER, or SPARKLING FOWL. This appellation is generally given to the female of the goosander. The head and upper part of the neck are iron-coloured; the throat is white; the feathers on the hind part, which are long, form a pendent crest; the back, the coverts of the wings, and the tail, are deeply cinereous; the greater quill-feathers are black, the lesser being white; and the breast and belly are white tinged with yellow. The wings of both male and female are very short in proportion to the size of their bodies; nevertheless, they fly very swiftly along the surface of the water. See GOOSANDER.

DUNG-FISH. This fish is broad and flat, about a span long, and the same in breadth. The body is variegated with dusky spots; the belly is blueish; the foremost rays of the back-fin are spiny, the posterior ones being soft. The Dung-fish is so termed on account of it's delighting in the vicinities of privies, where it searches for it's food, and is usually taken.

DUNG-HUNTER. This bird, which frequents the arctic regions, is called by Marten the *struntgager*. The bill is blunt at the fore part, thick, and somewhat hooked; the legs are of a moderate length; and the claws, which are three, are united by a black skin or membrane. The tail, which expands itself after the manner of a fan, has one feather that projects farther than the rest, whereby this may be distinguished from all other birds. The eyes, together with the top of the head, are black; and round the neck there is a dark yellowish ring or circle: the wings and the back are brown; and the belly is white. This creature grows to the size of the common mew, and generally builds it's nest in an elevated situation. It pursues a certain bird, named *kutgeghes*, without intermission, till the fugitive voids it's ordure; on which, as well as the fat of whales, the Dung-Hunter feeds. The flesh is rank and disagreeable.

DUNG-WORMS. A species of fly-worms, having short flat bodies, commonly found among cow-dung during the months of September and October.

E A G

October. Their metamorphosis into the fly-state is performed within shells composed of their own skins. The fly produced from the worm, which falls under Reaumur's first class of two-winged flies, has a trunk and lips, but no teeth; and its body is composed of six rings. The head, which is extremely round, and nearly of a spherical figure, is very large in proportion to the body; the antennæ are of the lenticular or battledore shape; the reticular eyes are of a deep chesnut-colour; and the three small ones are placed as is usual in insects of the same class. The corselet is a fine gilded green; and the back is composed of such a variety of changeable colours, that no description of them is capable of conveying an adequate idea of their beauty. The under part or belly is a pale yellow; and the legs and balancers are of the same hue, but rather more faint.

DUNLIN. The English name of a bird of the snipe kind, the *tringa alpina* of Linnæus. The back, head, and upper-part of the neck, are ferru-

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gious marked with large black spots; the lower part of the neck is white impressed with broad dusky spots, or with a black crescent pointing towards the thighs; the tail is cinereous, the two middle feathers being the darkest; the legs are black; and the tail is divided to its origin.

The Dunlin, which is rather larger than the lark, is sometimes seen on the sea-coasts of the British isles, but may be reckoned among the rare aves. It lays four eggs of a dirty white colour, blotched with brown round their thickest ends, and marked with a few small spots of the same colour on their smaller extremities; and its flesh is esteemed a peculiar delicacy.

DUNTER-GOOSE. An appellation sometimes given to the eider-duck, the *anas molissima* of Linnæus; a fowl very common in the Hebrides.

DYTISCUS. A term by which some naturalists distinguish a particular species of the water-beetle.

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EAGLE. A species of falcon in the Linnæan system of zoology; being the largest, strongest, as well as swiftest, of all predaceous birds.

Eagles generally fix their retreats in such situations as are most remote from mortals; on whose possessions they rarely commit any depredations, chusing rather to prey on the wild game of the forest than to gratify their appetites at the hazard of their safety.

The Eagle is among birds what the lion is among quadrupeds; and, in many respects, they strongly resemble each other: they both exercise a kind of sovereignty over their fellows of the forest; and, equally magnanimous, disdain all petty plunder, and pursue only such animals as are worthy of conquest. The Eagle scorns to share the spoils of another bird, and accordingly rejects every species of prey which he has not acquired by his own industry and prowess. However craving his appetite may be, he never stoops to feed on carrion; nor, when satiated, does he ever return to the same carcass, but leaves it to other creatures more rapacious and less delicate than himself. Like the lion, also, he is solitary in his disposition; and it is as extraordinary for two pair of Eagles to be found on the same mountain, as for two lions to be observed in the vicinity of each other: they live asunder for the purpose of obtaining a more ample supply of food, and consider the quantity of their game as the surest test of their dominion.

The lion and the Eagle strongly resemble each other in other respects: their eyes are sparkling, and nearly of the same colour; their claws are shaped alike; and their voices are loud and tremendous. Adapted to a state of warfare, they are inimical to all society; and equally fierce, proud, and incapable of being reclaimed.

Infinite art and patience are requisite in taming the Eagle; and, even when taken young, and hum-

bled by long assiduity, it proves but a dangerous domestic, and rarely shews much regard for its feeder. When the falconer introduces this creature into the field for the purposes of fowling, he is never sure of its attachment: innate pride and love of liberty prompt it to regain its native solitudes; and frequently, on being first turned loose, it rises perpendicularly into the clouds, and is seen no more. Sometimes, however, its natural ferocity has been so far subdued, that it has evinced no small degree of love for its master: and on such occasions it proves highly serviceable to him, in amply providing both for his pleasure and support; for, when liberated, it hovers round him in a sportive manner, till the game presents itself; which the Eagle being capable of discerning at an astonishing distance, instantly pursues and overtakes.

The Eagle soars the highest of all the feathered tribe; and hence the ancients have given it the epithet of the Bird of Heaven: of all others also it has the most perspicacious eye; but its sense of smelling is much inferior to that of the vulture. It never pursues but when its prey is in sight; which, whenever it has seized, it places on the ground, previous to carrying it off. Though very powerful when on the wing, the joints of its legs being rather stiff, it finds some difficulty in rising again after a descent: however, if not instantly pursued, it will with facility carry off a goose, or any other bird equally large. It also seizes on hares, lambs, and kids; which last, as well as fawns, it frequently destroys for the sake of drinking their blood, and carrying away some part of their flesh to its retreat. Even infants, when left unattended, have at times fallen victims to this rapacious creature; which circumstance probably gave rise to the fable of Ganymede's having been snatched up to heaven by an Eagle. Sibbald, in his History of Scotland, records an instance of two children that were carried

E A G

ried off by Eagles: but providentially they sustained no material injury; for the creatures, when pursued, deposited the babes in their nests, from whence they were recovered.

Thus Eagles prove at all times very formidable neighbours; but more particularly so when nourishing their young; for on such occasions both the male and female exert all their force and industry to supply the wants of their progeny. Smith, in his History of Kerry, informs us, that a certain peasant in that county procured a comfortable subsistence for himself and family, during a summer of famine, by plundering Eaglets of vast quantities of food which the old ones incessantly brought them. In order to protract the attendance of the parent birds beyond the natural time, he clipped the wings of the young; and, by thus retarding their flight, secured the advantage of participating in their spoils: it was, however, fortunate for this peasant, that he was not surprized by the old Eagles in committing these depredations; their resentments at times proving fatal, as will appear by the following account.

Some years ago, a countryman formed an intention of robbing an Eagle's nest, which was situated in a small island in the beautiful lake of Killarney in Ireland. Having stripped off his cloaths, he swam towards the place while the old birds were absent; and, after robbing the nest of the young, was preparing to return with the Eaglets tied together by a string; but, after being immersed in the water as high as his chin, the old Eagles returned to their nest, and missing their brood, darted instantly on the plunderer, who, in spite of all the resistance in his power, fell a sacrifice to their revenge.

In order to the extirpation of these pernicious birds, there is a law in force in the Orkney islands, where they are very numerous, which entitles any person who kills an Eagle to a hen out of every house in the parish where such bird is destroyed.

The Eagle has always been regarded as the king of birds, either on account of his great strength, the terror which he inspires, his natural fierceness, or the rapidity and elevation of his flight. Bochart tells us, that he lives a whole century, gradually increasing in bulk till his death; and, if so, we may the more easily credit Athenæus, who says, that Eagles, having wings twenty cubits long, were exhibited, by way of ornament, at the triumph of Ptolemy. Such is the voracity of this bird, that a large extent of country is scarcely sufficient to furnish him with prey necessary for his support; on which account, as before observed, two pair of Eagles are never to be found in one and the same quarter. Aristotle and Pliny assert, that these animals chase their young, not only out of their nests, but even the country they inhabit, as soon as they are able to fly. As the Eagle subsists solely on the flesh of such creatures as he destroys, so he also quenches his thirst with their blood, never drinking water when in health. The swan, it is said, is the only bird that is capable of opposing this formidable enemy of the winged tribe; all other birds dreading him to an inconceivable degree, as well as trembling at his cry. Nor are the inhabitants of the liquid element exempted from his voracity; he perceives them, even at the very bottom, as he skims over seas and lakes; darts downward on them with the rapidity of an arrow; and, dragging them to the shore, devours them in an instant.

The Eagle's astonishing sharpness of sight gives

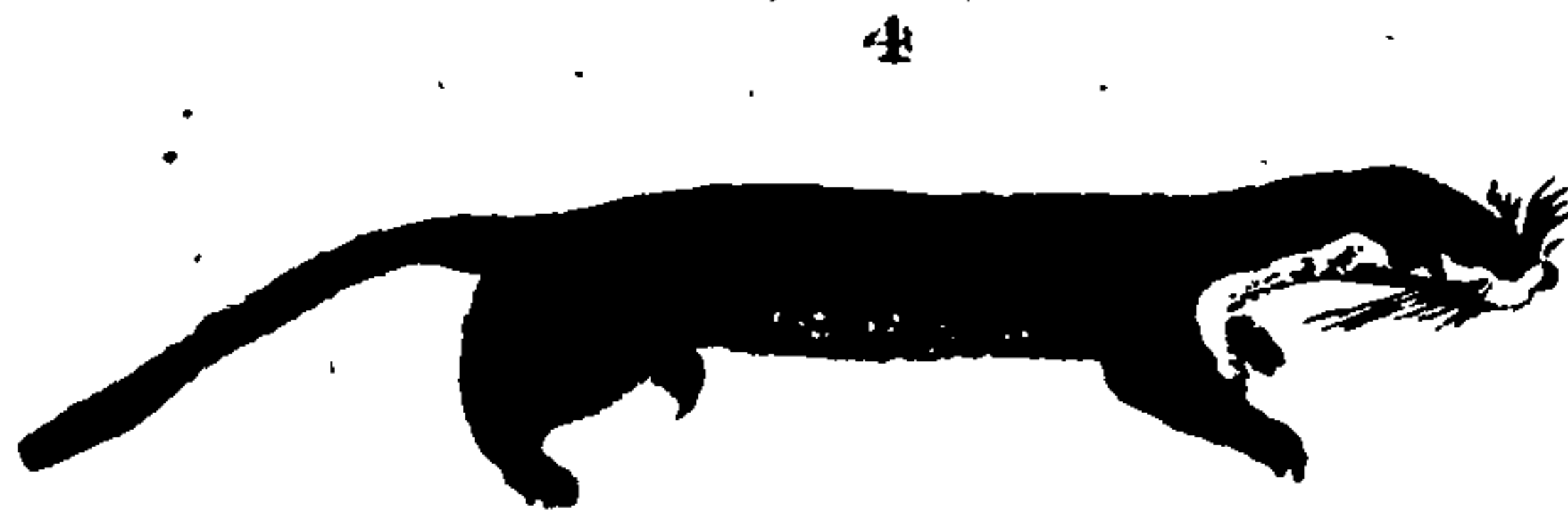
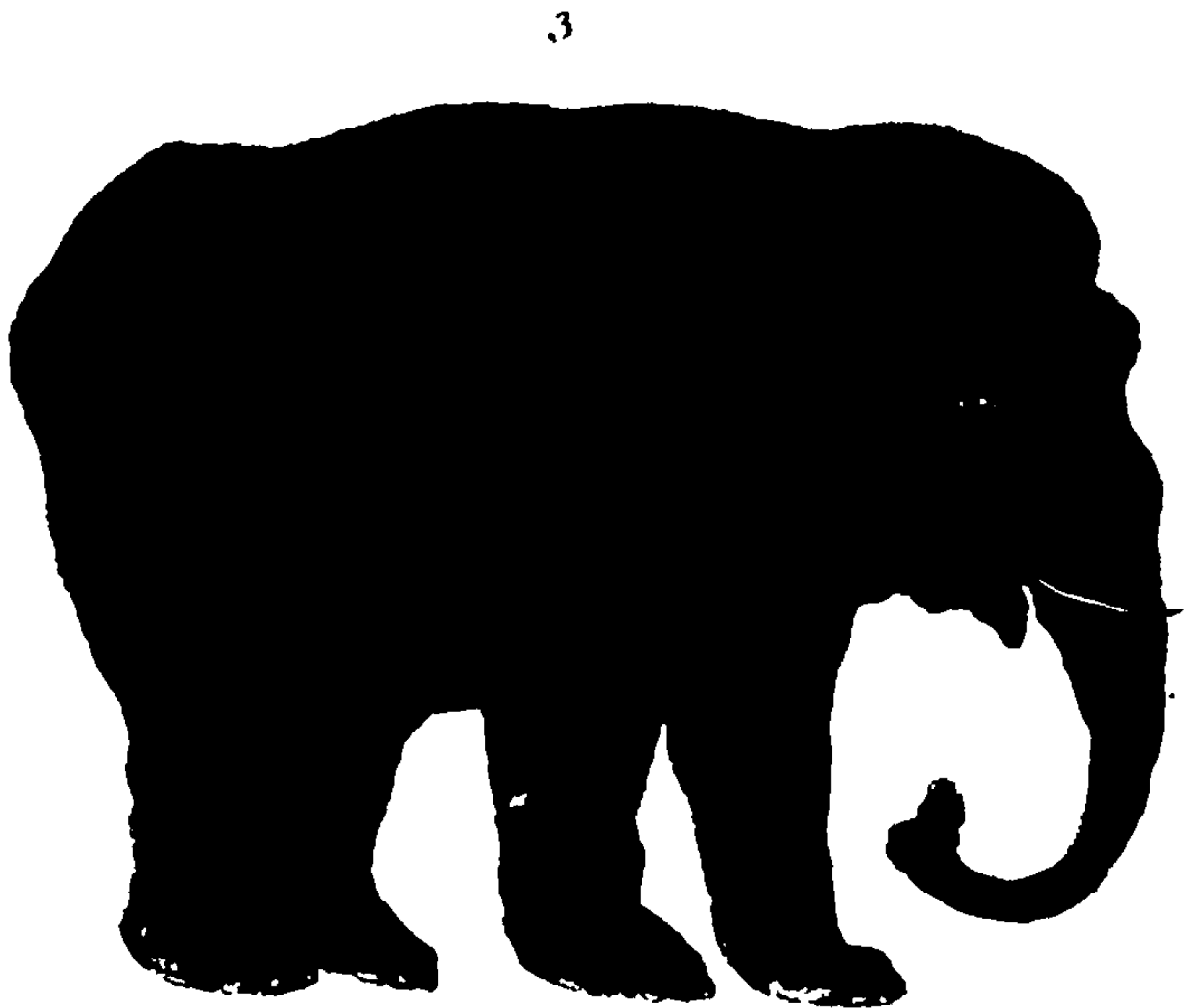
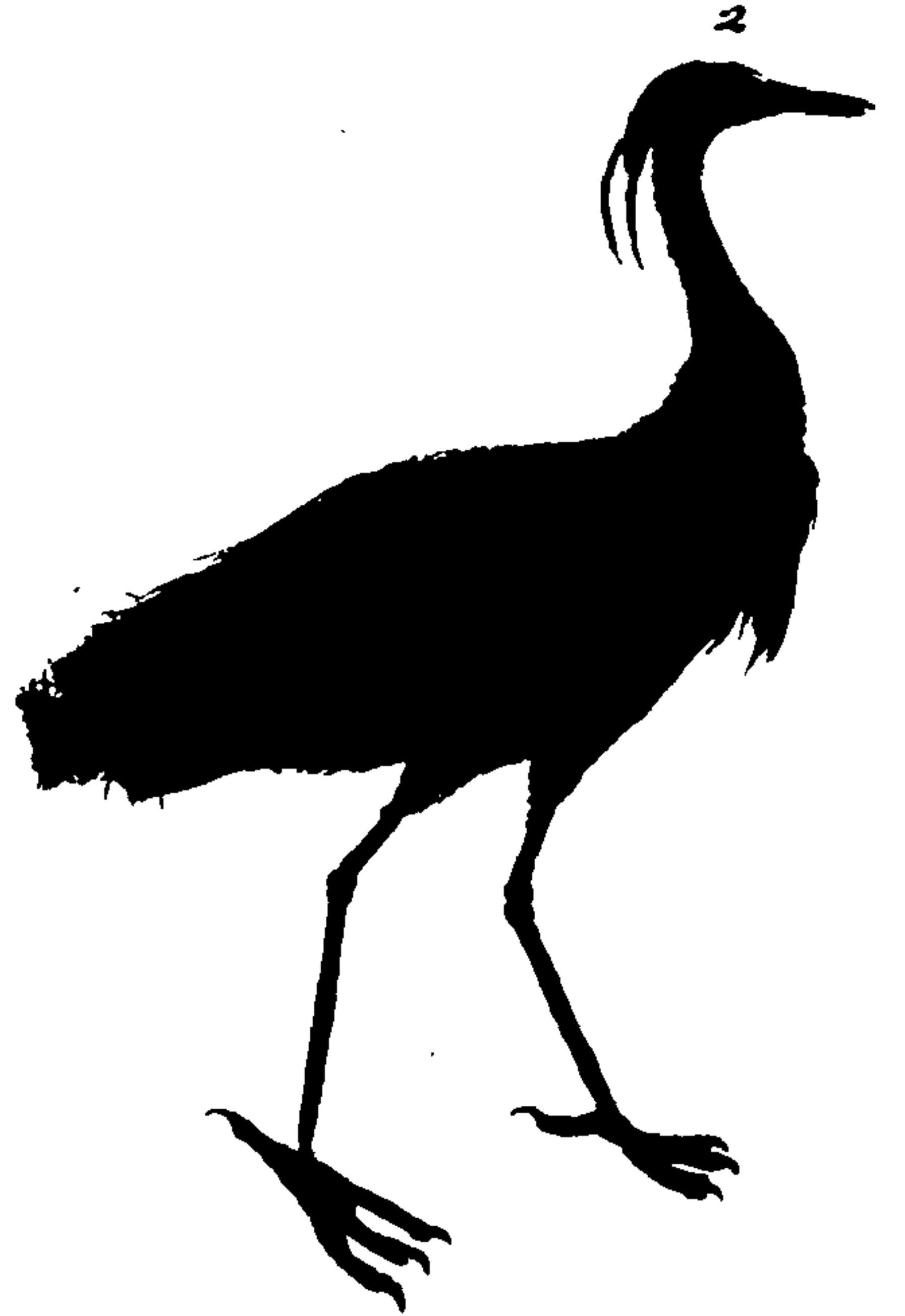
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him a decided superiority over every other bird, and of this advantage he seems so very sensible, that, in order to preserve it in the species, as soon as the young begin to acquire strength, the parent turns them towards the sun, obliging them to fix their eyes on this dazzling luminary; and, if any one of them is found to be incapable of supporting the heat and force of his rays, it is speedily chased from the nest, as unworthy of protection and assistance: while, on the other hand, such of them as acquit themselves with reputation in this ordeal, are cherished with remarkable affection, fed with the utmost attention, and taught to fly and pursue with astonishing assiduity. The parent bird afterwards bears them on his wings, in such a position as to be in no danger from the aim of the fowler; quits them in the middle of the course, in order to prove their powers; and, if he perceives that they are either unable to support themselves alone, or run the smallest hazard of falling, he darts himself below them with the utmost celerity, and receives them between his pinions.

The reason why the Eagle is thus able stedfastly to look on the sun, and to sustain his most dazzling rays, is because he is furnished with two eye-lids; by one of which his eyes are entirely shut; while with the other, which is thinner, they are as it were veiled when beholding any luminous object, and it's glaring light is thereby rendered much more supportable. This appendage enables the Eagle to rise to a prodigious height; and to this instinct he owes the renewal of his strength and youth; in which the learned, and even the critics themselves, are agreed. Every ten years his feathers become heavy, and of course less proper for flight: he then makes an effort, and approaches nearer the sun than usual; where, after being excessively heated, he plunges immediately into the sea; on which his feathers fall off, and are supplied by new ones, which restore him to his pristine strength.

Ælian, who ascribes to the Eagle a peculiar instinct of gratitude, gravely informs us, that one which Pyrrhus had brought up, and constantly followed him, was so sensible of the death of that illustrious warrior, that he refused either to quit his body, or to receive any nourishment; and that another threw himself into the same funeral pile which consumed the corpse of his master.

The nest of the Eagle is usually built in the most inaccessible cliff of a rock, and frequently shielded from the inclemency of the weather by some jutting crag which overhangs it: at times, however, it is wholly exposed to the winds, as well sideways as from above; for it is generally flat, though constructed with abundant labour. Some naturalists inform us, that one nest serves the Eagle during his whole life; and indeed the great pains taken by the animal in forming it render this conclusion probable. One of these habitations was discovered in the Peak of Derbyshire, which Wulghby thus describes. 'It was made of great sticks, one end resting on the edge of a rock, and the other on two birch-trees. On these was placed a layer of rushes, and over them a layer of heath, and on the heath another layer of rushes; and on them lay an Eaglet and an addled egg; and by them a lamb, a hare, and three heath-pouts. The nest was about two yards square, and had no hollow in it. The young Eagle was of the shape of a goshawk, and weighed nearly as much as a goose; it was rough-footed, or feathered down to the foot, and had a white ring about the tail.'



1. COMMON EAGLE 2. EGRET. 3. ELEPHANT. 4. ERMINE

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The largest species of Eagles seldom lay more than two eggs a piece, and the smallest never more than three. The female, it is said, hatches them for thirty days; but, notwithstanding her care and assiduity, she seldom produces a bird from every egg.

The plumage of Eaglets is not so strongly marked as when they become adult: they are at first white; afterwards they incline to yellow; and, lastly, to brown. Age, hunger, long confinement, and disease, render them still whiter and whiter; but it is said that, when they die at last, it is not so much through age as from their beaks turning inwards on their under mandibles, and thereby preventing them from taking their necessary food. Pennant observes, that they are equally remarkable for their longevity and long abstinence from food; that one of these species, at the time of writing his *British Zoology*, had been nine years in the possession of Mr. Owen Holland of Conway, as well as lived thirty-two years with the gentleman who made him a present of it; but that he was unacquainted with its age when the latter received it from Ireland. This bird also verifies the former remark; for, through the negligence of servants, it was once suffered to fast for twenty-one days, not having received any sustenance whatever during that period.

Such are the general characteristics and habits of the Eagle; though, in some species, these habits differ, as will appear in the particular descriptions of each.

EAGLE, COMMON. The Common Eagle is of a brown colour; the head and upper part of the neck incline to red; the feathers of the tail are white, except towards their ends, where they are blackish; the four exterior ones on each side are cinereous; and the legs are clothed with a reddish brown plumage.

EAGLE, GOLDEN; the *falco chrysaetos* of Linnaeus. This bird, which is the largest and noblest of the Eagle kind, weighs about twelve pounds; its length is three feet, and the extent of its wings seven feet four inches. The bill, which is three inches long, is of a deep blue colour; the eyes are hazel; and both the sight and sense of smelling are very acute. The head and neck are covered with narrow, sharp-pointed, dark brown feathers, edged with tawny; but, in those which are far advanced in years, the plumage of the crown the head is grey. The whole body is a dark brown, the feathers on the back being delightfully shaded with a deeper tinge of the same colour. The wings, when closed, reach to the end of the tail; the quill-feathers are chocolate-coloured, with white shafts; the tail is a deep brown, irregularly barred and spotted with an obscure cinereous, the roots of the feathers being generally white. The legs, which are yellow, short, and very strong, are three inches in circumference, and feathered down to the very feet; and the toes are covered with large scales, and armed with very formidable claws, the middlemost being two inches long.

This species is found in the mountainous parts of Ireland, and generally breeds in the loftiest cliffs. It usually lays three, and sometimes four eggs, though seldom more than two of them become prolific; Providence mercifully denying a large increase to rapacious animals, because noxious to man; but graciously permitting an unlimited multiplication of such as are serviceable to him. The Golden Eagle has also at times been

E A G

seen in Caernarvonshire; and there are some few instances of its having bred on Snowdon Hills; from which circumstance some writers have given that tract the appellation of the Eagle Rocks.

EAGLE, BALD. This species, which inhabits North Carolina, is remarkable for habits peculiar to itself. In that country, Eagles breed throughout the whole year; and, as soon as the young are covered with down and a kind of white woolly feathers, the females, in order to a future progeny, lay other eggs, and leave them to be hatched by the warmth of the young Eaglets which continue in the nest; the flight of one brood always making room for the next, which is then but just excluded. The Bald Eagle flies very heavily, and is incapable of overtaking its prey like the rest of the tribe: it therefore generally attends on the fowlers during winter; and, when any birds are wounded by them, it immediately seizes them. It also frequently steals young pigs, and carries them alive to its nest, a very filthy one, composed of twigs, sticks, and rubbish, and generally stored with half-eaten bones and putrid flesh. The body of this ravenous bird is brown; the head, neck, and tail, are white; and the upper-parts of the legs are brown.

EAGLE, RING-TAILED; the *falco fulvus* of Linnaeus. This species, which seems to be peculiar to the northern parts of Europe and to America, is of the size of the common Eagle; the bill is of a blueish horn-colour; the upper mandible, which is arched, hangs over the lower one about an inch, having an angle or tooth on each side; and the lower mandible is shorter than the upper, and inclosed in it. The irides are hazel-coloured; and the pupil is black. Between the bill and the eyes there are spaces of bare skin of a dirty hue, thinly set with small black hairs; the head and neck are invested with narrow brown feathers ending in sharp points; and the whole body is covered with dusky brown feathers, darker on the back, and lighter on the under-side. The breast is marked with white triangular spots in the middle of each feather; the covert-feathers of the wings are of the same colour as those of the body; the quills or flag-feathers of the wings are black; and a few of the quills in the first row of coverts next the back are variegated with transverse lines of a darker and lighter colour. The tail, which is of an equal length with the wings when closed, is white, except the tips of the feathers, which are black, or dark brown; and the coverts under the tail are a reddish brown or bay. The thighs are invested with dark brown feathers of a very loose texture, through which a white down appears in some places; and the legs are covered, quite down to the feet, with a soft reddish brown plumage. There are four toes on each foot, very thick and strong, and covered with yellowish scales; and the claws or talons, which are black, and very powerful, bend almost into semicircular figures, and terminate in very sharp points.

EAGLE, BLACK. This bird, which strongly resembles the ring-tail Eagle in almost every respect, is very frequent in Scotland, where it is called the Black Eagle from the colour of its plumage. It seizes the deer between its horns; and, by incessantly beating the eyes of that animal with its wings, soon makes a conquest of it; and, in the isle of Rum, the Eagles have almost extirpated the breed of stags which used to abound there. This species generally builds their nests in cliffs of rocks near the deer-forests; and make great havoc, not

only among the fawns, but also the white hares and ptarmigans.

The Black Eagle is nearly of the size of the golden one; the bill is of a blackish horn-colour; the cere is yellow; and the whole body is a deep brown slightly tinged with rust-colour. The legs are feathered down to the very feet; the toes are yellow; and the claws are black. But the most remarkable peculiarity of this bird is a white band on the upper part of the tail; which mark it retains in every stage of life, as well as in every country where it is found.

EAGLE, SEA; the *falco ossifragus* of Linnæus. Sea Eagles are found in several parts of Great Britain and Ireland. Willughby informs us, that there was formerly an aerie of them in Whinfield Park, Westmoreland; and Turner asserts, that in his time they were well known in England, on account of their making prodigious havock among all sorts of fish; and that fishermen generally anointed their baits with the fat of these birds, from a conceit that it possessed a peculiar alluring quality: nay, so very superstitious were they, that whenever the Sea Eagle hovered over a piece of water, they believed that the finny inhabitants, as if charmed, would rise to the surface with their bellies upwards.

Though the Sea Eagle is no uncommon species, it seems at present to be but little known; for, ever since the time of Clusius, it has not been described by any naturalist except the accurate Pennant; and has generally been confounded with the golden Eagle, to which bird indeed it has some resemblance. The colours of the head, neck, and body, are the same with those of the golden Eagle, but much lighter: it is also far superior in size; the bill is larger, more hooked, and arched; and underneath there are some short strong hairs or bristles that form a sort of beard; from which circumstance some writers have supposed it to be the *aquila barbata*, or bearded Eagle, of Pliny. The interior sides, and the tips of the feathers of the tail, are of a deep brown colour; the exterior sides of some of them are of an iron hue, and of others spotted with white. The legs, which are strong, thick, and yellow-coloured, are feathered only a little below the knees; which circumstance makes an invariable distinction between the Sea and the golden Eagle; and this nakedness of the legs is of the utmost convenience to birds whose prey is lodged in the water. The claws are of a deep shining black hue, exceedingly large and strong, and hooked into a perfect semicircle.

All naturalists seem to coincide in opinion that the Sea Eagle feeds principally on fish, which it seizes, when swimming near the surface of the water, by darting down on them, but not by diving or swimming, as some authors have asserted; and who for that purpose have in their descriptions given it a webbed foot to swim with, and another divided one to catch its prey. Marten says, that those Eagles which inhabit the Western isles, fasten their talons in the backs of salmon, which often rise to the surface of the water, and sometimes above it, and in that manner carry them off; and that they also prey on aquatic fowl: and Pliny, with his usual precision, gives a very agreeable description of the chace, an amusement frequently enjoyed by the inhabitants in the vicinity of the large lakes formed by the River Shannon.

EAGLE, CINEREOUS. This bird, which is also called the *erne*, is inferior in size to the golden Eagle. The beak, cere, and irides, are of a very

pale yellow colour, the space between them and the eyes being bare and blueish. The head and neck are a pale cinereous; the body and wings are of the same hue clouded with brown; the quill-feathers are very dark; the tail is white; the legs, which are a light yellow, are feathered but a very little way below the knees; and the male is considerably darker than the female. The bill in this species is somewhat straighter than usual in the Eagle kind; which circumstance seems to have induced Linnæus to place it among vultures; but, with all becoming deference to so respectable an authority, it can have no claim to be ranked with that genus, the *erne* being wholly feathered; whereas the characteristic mark of the vulture is, that the head and neck are either quite bare, or only covered with down. The Cinereous Eagle inhabits Scotland and the Orkneys, and feeds on fish and land animals indiscriminately.

EAGLE, CROWNED. This very curious bird is a native of Africa, and was first described by Edwards. It is about one-third smaller than the larger species of European Eagles; but, like them, appears to be bold and intrepid. The bill, and the skin which covers the upper mandible, are of a dusky brown colour; the corners of the mouth, which are cleft pretty deep under the eyes, are yellowish; the circles round the eyes are a reddish orange; the fore-part of the head, the space between the eyes, and the throat, are covered with white feathers variegated with small black spots; the hinder part of the head and neck, the back, and the wings, are of a dark brown or blackish hue, the exterior edges of the feathers being a lighter brown; the quills are darker than the other feathers of the wings; the ridge in the upper parts, and the tips of some of the lesser coverts of the wings, are white; the tail is brown transversely barred with black, its under side appearing of a dark and light ash-colour. The breast is a reddish brown, with large transverse black spots on its sides; the belly, and the covert-feathers under the tail, are white spotted with black; the thighs and legs, down to the very feet, are covered with white feathers beautifully marked with round black spots; the feet and claws are very strong, the former being covered with bright orange-coloured scales, and the latter with black.

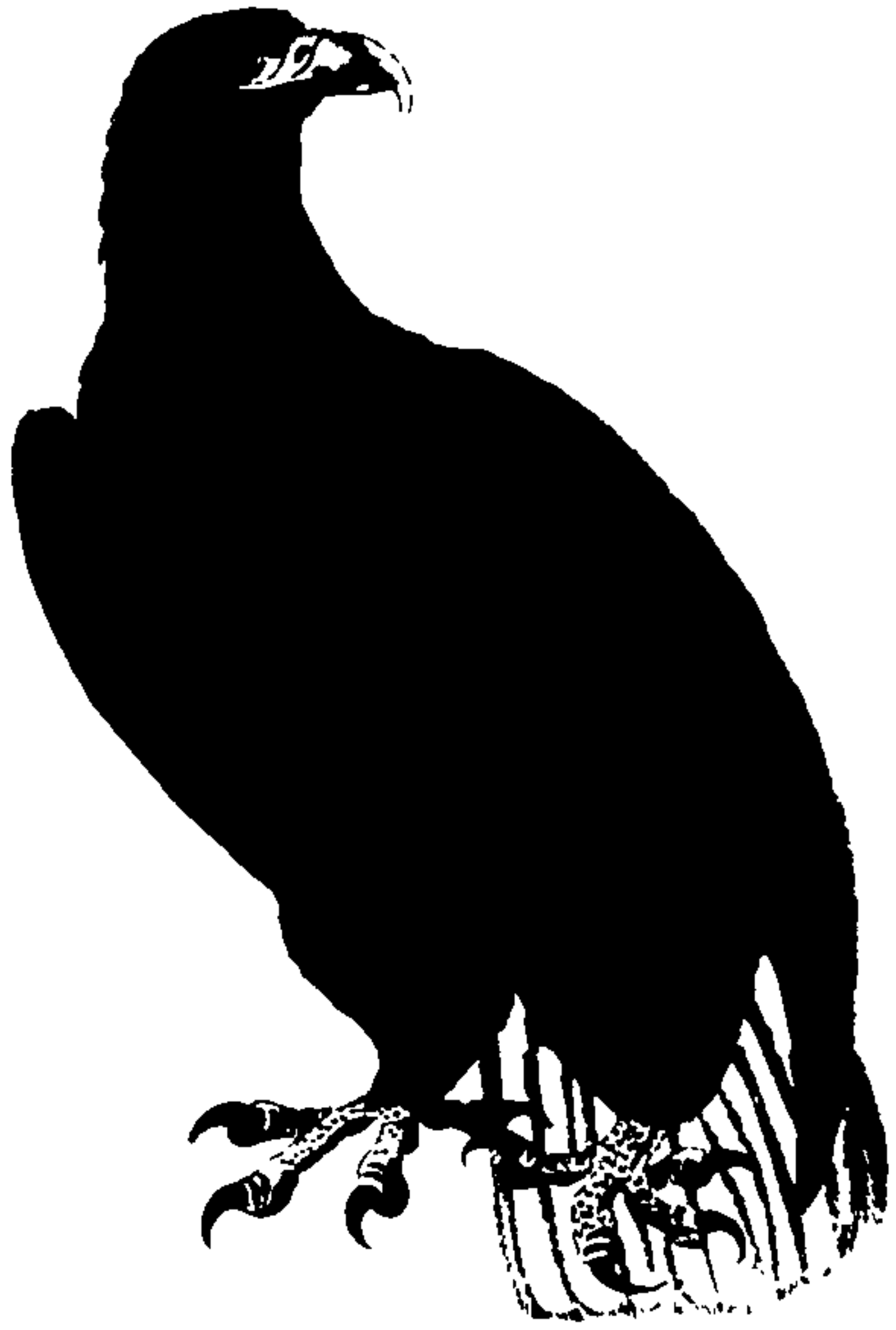
This Eagle can at pleasure erect the feathers on the hind-part of its head, so as to form a kind of crest or crown; from which circumstance it derives its name; and, like other birds of the same species, it is remarkable for its voracity and sharpness of sight.

EAGLE, BLACK-BACKED. This bird is of the magnitude of the golden Eagle; the bill is black, and the cere yellow. The head, the hind-part of the neck, the belly, and the coverts of the wings, are ferruginous; and the under-side of the neck, the back, and the quill-feathers, are black. That part of the tail nearest to the root is white, and the rest of it is black. The legs, down to the very feet, are covered with ferruginous feathers; the toes are yellow; and the claws are black.

EAGLE OF PONDICHERRY. This species is wholly of a chestnut-colour, except the one half of the six exterior tail-feathers, which are black.

EAGLE, OROONOKO. This bird has an elegant crest, of a deep brown colour above, and white spotted with black beneath. The upper part of the neck is yellow; and the feathers of the tail are brown with white circles, those of the legs being white spotted with black.

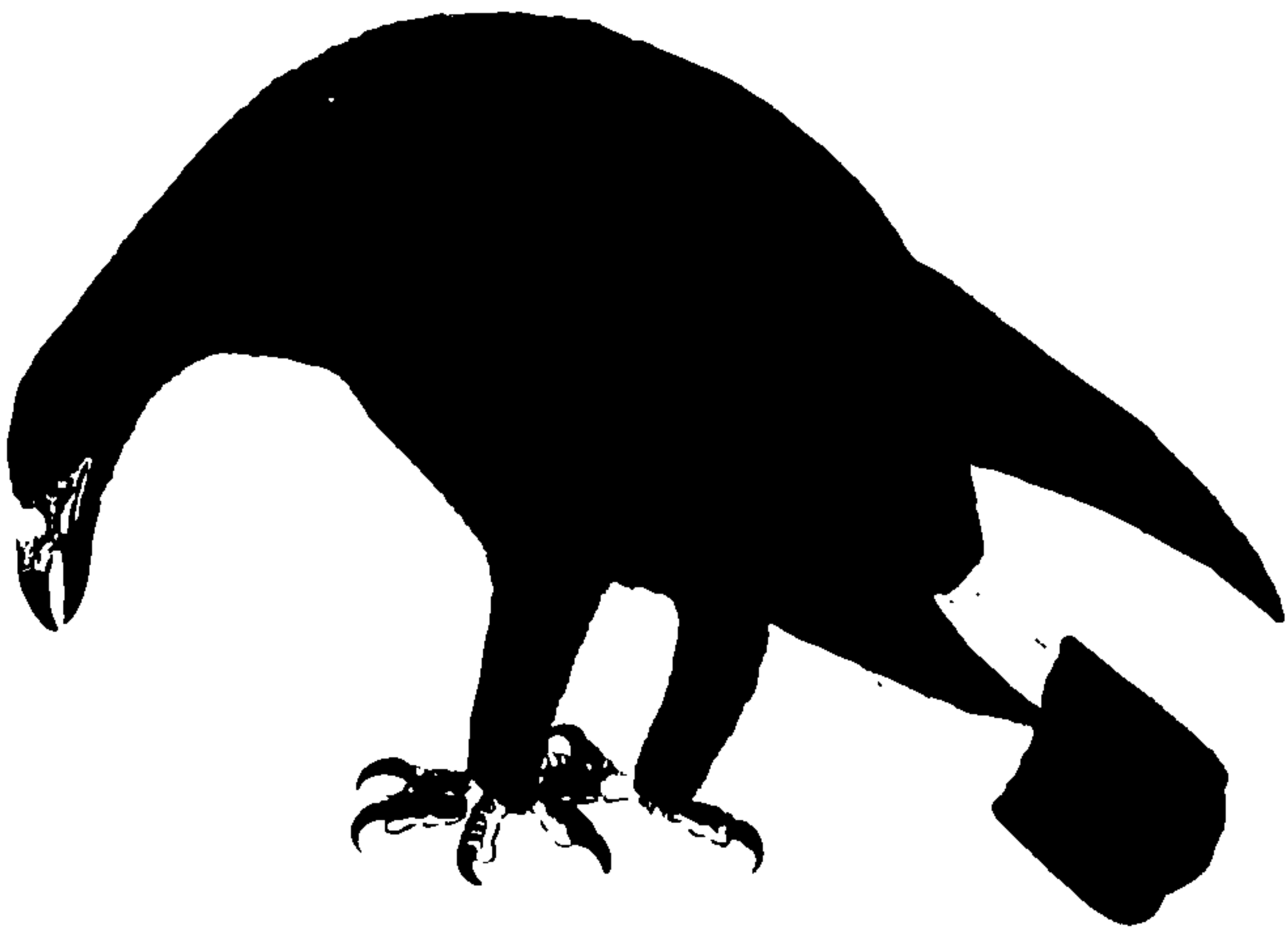
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1 BLACK-BACKED EAGLE. 2 CRESTED EAGLE. 3 CROWNED EAGLE.
4 RING-TAILED EAGLE.

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EAGLE, BRAZILIAN. The Brazilian Eagle is of a deep brown colour, with an admixture of cinereous in the wings; the tail is white; and the legs are naked.

EAGLE, JEAN LE BLANC. This species is of a brownish grey colour above, and white spotted with tawny brown below. The feathers on the outside, and on the extremity of the tail, are brown, those on the inside being white streaked with brown; and the legs are naked.

EAGLE, ROUGH-FOOTED. The Rough-Footed Eagle is of a dirty iron colour above, and of an iron one mixed with black below. The head and neck are cinereous mixed with chesnut; the points of the wings are blackish; the tail is white; and the legs are bare.

EAGLE, WHITE. This Eagle is invariably of a beautiful white colour throughout; and from this circumstance it receives it's name.

EAGLE, SEA. A species of cartilaginous flat fish, of the *pastinacha marina* kind. The head is almost like that of the toad; and the eyes are large, round, and prominent. The tail, which is long, slender, and sometimes above two ells in length, is armed with a long sharp weapon, the wound of which being extremely dangerous, is avoided by mariners with the most careful circumspection. The body is larger than that of the fire-flaire; the mouth is full of teeth; and the skin is soft and smooth, the upper part being livid, and the under white.

These fish are generally taken when small, but some have been caught which weighed upwards of three hundred pounds. They may easily be distinguished from other gristly fish by the length of their tails, as well as by their large weapons or spines, which are sometimes single, and sometimes double, but always venomous. They inhabit the Mediterranean seas, and are often brought to the markets of Rome and Naples. Their flesh is soft and moist; but having a rank nauseous smell, it is therefore seldom served up at the tables of the opulent. They receive their name from their thin broad sides, which represent the expanded wings of eagles.

EAR-SHELL. In the Linnæan distribution, a species of the *haliotis*. The characters of the Ear-Shell are these: it consists only of one shell or valve, of a flatted shape, and somewhat resembling the human ear; and at the base there is a very wide mouth or aperture, the largest in any shell except the *patella* or limpet.

Aldrovandus and Rondoletius have given this genus the name of *patella fera*, or wild limpet; but in this distribution they have few imitators, as it confounds the *auris marina* and *patella*, which are absolutely two distinct genera.

This genus sometimes yields small pearls, the rudiments of which are frequently seen in those shells which have not brought them to perfection; and the whole internal side of the shell is of the colour of the most beautiful mother-of-pearl: this also appears externally, when the rough coat is so far corroded by acids, as to leave this pearly substance naked; in which case it makes a very elegant appearance, possessing the splendor of the most beautiful mother-of-pearl both within and without; and in this state it is frequently preserved in the cabinets of the curious.

This shell, both internally and externally, is marked with very high ribs, which run from one side to another; and in every species of these shells

E A R

there is a row of holes near one edge, of which six are usually open; and beyond these are the marks of three or four more, which do not entirely perforate the shell: these are formed in the growth of the fish, which, as it enlarges, extends the shell; and, when a new rim is formed, wherein there is an open hole, one of the hinder ones is always closed up by the superaccession of fresh shelly matter.

EAR-SHELL, GREAT. This species is five inches in length, and nearly three in breadth; and it's shape is an irregular oval, the end where the spiral turn is placed being the largest. The back, or hinder edge, is thick, and so turned as to form a kind of lip; the fore-edge is thin, simple, and even; and the upper surface is brown, rough, and uneven, with a kind of undulated line; the part nearest the head is thickest; and the spiral turn is short and depressed. Along the back-part of the shell, near the thickest edge, there is a row of roundish-shaped holes, seven of which are open; and there are the marks of several others which do not penetrate quite through the shell. The internal surface is of a beautiful pearl hue, apparently variegated with several bright colours when placed in different directions of light; and there are also a kind of watery protuberances having the appearance of pearls. This shell is chiefly found in the East Indies.

EAR-SHELL, LONG. The Long Ear-Shell, which has an undulated head and eight holes, is three inches long, and an inch and a quarter broad, but not more than half an inch high. The head is large; and the spiral turn is very beautiful and fair. The back of the shell forms an even lip, the fore-edge being thin and undulated; the external side is smooth except where it receives a slight undulation from the spiral turn, and is of a greenish colour variegated with a brownish red; the internal side is of a pearly hue finely diversified with a variety of other tints; and on the back-edge there is a long row of holes, eight of which are always open. This species, which is found adhering to the rocks on the Malabar coast, in the East Indies, is much admired.

EAR-SHELL, STREAKED, OR WRINKLED. This species, which has six holes, is three inches and a half in length, and two in diameter near the head. It is externally of a dusky brown colour; and exhibits many slight irregular undulated ridges, which begin near the spiral end, though they almost vanish before they reach it.

EAR-WIG. A genus of insects of the order of *coleoptera*. The tail forms a kind of forceps endued with the faculty of pinching; the exterior wings are very short, but dimidiated; and the antennæ are setaceous. The feet are six in number; and the body is about the thickness of a small worm, and very smooth.

Though not produced quite perfect from the egg, this insect requires but a very small change before it arrives at that state which fits it for flight and generation. It's natural functions are never suspended: from the instant it leaves the egg, it continues to eat, move, leap, and pursue it's prey; and a skin which inclosed a part of it's body and limbs bursts behind, and gives full play to a set of wings with which the animal flies in pursuit of it's mate.

The swiftness of the Ear-Wig, in it's reptile state, is not less remarkable than it's indefatigable velocity when on the wing. That it must be very prolific, appears from the great numbers produced; and

E A R

and that it is exceedingly harmless, almost every person's experience can testify. With it's tail, which is forked, it frequently attempts to defend itself against it's assailants; but such efforts are merely the threats of impotence, as they only draw forth the aggravated resentment of more powerful animals without conducing to it's own preservation. The deformed figure and slender shape of the Ear-Wig have also subjected it to an imputation, which, though totally founded in prejudice, often operates to it's destruction: it is supposed frequently to enter the ears of persons when asleep, and to cause intolerable pain; the consequence of which is madness, and soon after death itself. Indeed, it's French appellation, importing an Ear-piercer, urges the calumny against this harmless insect in very pointed terms: but nothing can be more unjust; for the ear contains a thick tenacious substance capable of entangling any insect that might attempt to enter it; besides, being well lined and defended with membranes, none of these animalcules could gain admission if the ear-wax was removed. Such a supposition, therefore, must be vague, and even groundless. The charges which gardeners bring against these insects are not, however, so destitute of foundation; for there is nothing more certain, than that they live among flowers, and destroy them; and when fruit also has been wounded by flies, the Ear-Wigs generally come in for a second feast, and extract those juices which before were only broached. Still, however, these creatures are less noxious in that respect than is generally believed; and they are but rarely the first promoters of any mischief.

As there are various species of these animals, so they fix on different breeding-places; but, in general, they deposit their eggs under the bark of plants, or of trees which have begun to decay. They proceed from the eggs in that reptile state in which they are most commonly seen; and, as they grow larger, their wings, bound under the skin, begin to protrude. The sheaths in which their wings are enveloped cover them so neatly, that the animals seem totally destitute of wings; and, even when they have burst from their confinement, by means of the muscles and joints in the middle of the wings, they fold together in a very narrow compass.

Whenever the Ear-Wig becomes an inhabitant of the sky, it flies in pursuit of the female, ceases to feed, and is wholly employed in the business of generation. It exists in it's winged state but a very short time; and, after having provided for a continuance of posterity, it begins to waste, and dies in a few days of an universal consumption.

The dried powder of Ear-Wigs is esteemed salutary in cases of deafness, and the oil prepared from them in spasms and convulsions.

EAR-WIG, SEA. See **FORFICULA MARINA.**

EARTH-PIKE. A species of West Indian lizard, called schink by some authors, from a supposition that it resembles the Egyptian animal of that name. It obtains the appellation of the Earth-Pike from it's fancied similitude to the River-Pike when the legs are amputated. This animal is very fleshy; the tail is more thick than is usual in the lizard genus; but the legs are so very short, that it is barely able to creep along the ground. The skin is covered with a vast number of small scales like those of serpents, of a yellow silvery colour shining as if rubbed with oil. The flesh of this creature, if eaten in moderation, is pretended

E A R

to be an antidote against poisons, and wounds inflicted by envenomed arrows.

Another species of the Earth-Pike is frequently found in wet and marshy situations. This very deformed creature is about seven inches in length; the back is covered with black and grey spots; the lower part of the belly, which is scaly, shines as if anointed with oil; the colour of the skin is a palish yellow; the head is little, and acuminate; the mouth is pretty wide, and armed with sharp teeth; and the eyes, which are very small, are incapable of supporting the glare of day-light. As soon as this animal is forced from under ground, it immediately endeavours to regain it's subterraneous abode, by digging the earth, like the mole, with it's hard hooked claws. It is extremely injurious to gardens and orchards, where it gnaws the roots of trees and plants. It's bite is also accounted venomous, and is perhaps not less so than that of the most poisonous serpent.

EARTH PUCERONS. An appellation given by naturalists to a species of Puceron which makes choice of a very singular habitation. If, during the month of March, the turf of any dry pasture be raised in several places, there will be found under various parts of it clusters of ants; and, on a more minute investigation, it will usually appear that these emmets are collected round some Pucerons of a peculiar species, which are large, of a greyish colour, and generally found in the middle of a cluster of pismires.

The common abodes of the several other species of Pucerons are in the young branches or leaves of trees; and, as the sap or juice of vegetables constitutes their only food, probably these earthy kinds extract the moisture from the roots of grass and other plants, in the same manner as others do from their different parts. The same ants which conduct us to these Pucerons also direct us where to find the greater part of the other species; for this reason, namely, that as these creatures feed on the saccharine juices of plants, they are evacuated from their bodies in a liquid form, very little altered from their original state; and the ants, which are fond of such food, find it ready prepared for them in the excrements which these little animals are continually voiding.

EARTH-WORM. A well-known insect belonging to the genus of intestines; which, being entirely destitute of feet, trails itself along the ground, till it finds a retreat either under the surface of the earth or in the water. A spiral muscle runs round it's whole body, from the head to the tail, somewhat resembling wire wrapped round a walking-stick, which, when slipped off, and one end extended and held fast, will bring the other nearer to it; and in this manner the animal having extended it's body, lays hold of the slime of the fore-part of it's frame, and so contracts and brings forward the hinder part; in that position moving on, though not without great efforts: but the occasions for it's progressive motions being but few, it's struggles are not often reiterated.

Destined by nature to a subterraneous abode and a life of obscurity, all the powers of the Earth-Worm seem adapted to it's situation. It's body is armed with small, stiff, sharp prickles, which it can either erect or depress at pleasure; and under the skin there is a kind of slimy juice, which the creature ejects, as occasion requires, at certain perforations between the rings of the muscles, in order to lubricate it's body, and thereby facilitate

E A R

its body, and thereby facilitate its passage into the earth. Like the generality of insects, it is furnished with breathing-holes along the back, adjoining to each ring; but it has neither bones, eyes, nor ears: however, it has a mouth, as well as an alimentary canal, which extends to the very extremity of the tail; but in some worms, particularly such as are found in the bodies of animals, this canal opens towards the middle of the belly, at a considerable distance from the tail. The intestines of these worms are always filled with a very fine earth, which appears to be the only nourishment they are capable of receiving.

The Earth-Worm is entirely destitute of brains; but the heart, which is situated near the head, is seen to beat with a very distinct motion; and round it are placed the spermatie vessels, which form a number of little globules containing a milky fluid; and having a communication with the belly not far from the head: in these also numbers of eggs are frequently found; which, being laid in the earth, are hatched in twelve or fourteen days through the warmth of their situation.

These worms, like snails, unite in themselves both sexes at once, the reptile which impregnates being fecundated in its turn; and perhaps there are but few persons who have not observed them with their heads placed against each other, and so strongly attached, as to suffer themselves to be very roughly handled rather than be disengaged.

The eggs of the Earth-Worms being laid in the earth, and brought to maturity in about fourteen days, as before observed, the young ones issue forth, very small, but perfect in their formation, and suffer no farther change during the whole period of their existence; but how long their lives are protracted, is not well ascertained, though they certainly extend to two or three seasons. At the commencement of winter, they bury themselves deep in the earth, and appear in some measure to share in the general torpidity of the insect tribe: but in spring they revive with the rest of nature; and a moist or dewy evening generally draws them from their retreats, for the purpose of propagating their kind. They live chiefly in a light rich soil, moistened by dews or accidental showers; but avoid those situations where the water is apt to remain on the surface of the earth, or where the clay is too stiff for their easy progression under ground.

Destitute and helpless as these reptiles may seem to be, they are extremely vigilant in avoiding all such animals as naturally prey on them; and in particular the mole, that feeds entirely on these creatures beneath the surface of the earth, and which, from the dimness of its sight, seldom ventures into the open air: this enemy they avoid by darting up from the earth the instant they perceive the soil begin to move; and fishermen, who are well acquainted with this instinct, take them in whatever numbers they please, by stamping on the earth where they expect to find them. They are also easily driven from their subterraneous retreats by pouring bitter or acrid water over them, such as that in which green walnuts have been steeped, or a lye made of potashes.

The foregoing are the general outlines of the history of these Worms; and, so far as we have proceeded, nothing has been remarked which appears to degrade them beneath the rank of other animals of the insect creation: but we now come to that part of it which proves the imperfection of their organs, from the facility with which these lit-

E A R

tle machines may be damaged, and again repaired. It is a well-known axiom in mechanics, that the finest and most complicated instruments are the soonest deranged, and with the greatest difficulty adjusted. The same also holds good in the animal economy: man, the most intricate machine of all others, whose nerves are very numerous, and his powers of action exceedingly various, is easily destroyed, frequently by casualties which even birds or quadrupeds readily survive; and, as we descend gradually to the lower ranks, the ruder the composition, the more difficultly is it disarranged. Some animals exist without their limbs, and often reproduce them; and others live destitute of brains for many weeks together: caterpillars continue to increase and extend themselves, though all their noble organs within are entirely destroyed; some creatures, though cut in sunder, still exist, and their nobler parts preserve life, while their amputated ones perish; but Earth-Worms, as well as all the zoophyte tribe, continue to live in separate parts; and one animal, by means of fecundation, is divided into numerous distinct existences.

Throughout the extensive subject of natural history, no phenomenon is more astonishing, than that man should at pleasure enjoy a kind of creative power, so as out of one life to produce two; each compleatly formed, with all its apparatus and functions; each having its perceptions, and powers of motion and self-preservation; and each being as compleat in every respect as that from which it derived its existence, and equally enjoying the humble gratifications of its nature.

When the ingenious, though enthusiastic, Des Cartes, first broached the doctrine that brutes were machines, the discovery of this surprising propagation was unknown, otherwise it would in some measure have strengthened his fanciful theory. He would naturally have asked, What is life in brutes? or, Where does it reside? In some, we find it so diffused, that every part seems to maintain a vivacious principle; and the same animal appears to be possessed of a thousand distinct irrational souls at one time. But nothing, in reality, deserves the name of soul, but that which reasons, understands, and is impressed with the image of its Creator.

Such might probably have been the speculations of this philosopher: but, quitting his theory, suffice it to remark, that we are indebted for the first discovery of this power of reproduction in animals to Mr. Trembley, who observed it in the polypus; and, after him, to Spalanzani, and some other ingenious naturalists, who found it prevail in the Earth-Worm, the Sea-Worm, and several other rudely-constructed animals of a similar kind which were susceptible of this novel mode of propagation. This last gentleman, to whom natural history in general is under the highest obligations, tried several experiments on Earth-Worms, many of which succeeded according to his expectations, though every individual animal did not maintain its vivacious principle with an equal degree of firmness: some, when cut in two, were entirely destroyed; others survived only in their nobler parts; and, while their heads continued to be animated, their tails perished, and new animals were observed to proceed from their extremities. But, what was most astonishing, in some of these Worms, particularly the small red-headed ones, both extremities survived the operation: the head produced a tail with an anus, the intestines,

E C H

the annular muscle, and the prickly beards; the tail-part, on the other hand, begat the nobler organs; and, in less than three months, sent forth a head, a heart, and all the apparatus and instruments of generation. The completion of this last part, as we may reasonably suppose, proved much more tardy than the former, a new head requiring about three or four months in order to perfection; while a fresh tail arrived at it's full maturity in less than as many weeks. Thus two animals, by being dissected, were produced from one, each endowed with it's distinct appetites, with perfect life and motion, and in every respect as compleat as that single one from which each derived it's origin.

The foregoing operation, performed on the Earth-Worm, obtained also with respect to many others of the vermicular tribe; namely, the Sea-Worm, the White-Worm, and many of those small ones with feelers, which are found at the bottoms of dirty ditches; in all of which the nobler organs were of so very little use, that, when removed, the animals did not seem at all sensible of their loss, for they lived in all their parts: and thus, by a strange paradox in nature, the most useless and contemptible lives are, of all others, extinguished with the greatest difficulty.

The Earth-Worm, when full-grown, often measures ten or more inches in length, and upwards of one-third of an inch in diameter; and it's colour is universally known to be a dusky red. But, besides the common Earth-Worm, there is another species found in mud about the sea-shores, which often grows upwards of a foot long, and entirely resembles the former, except that it's colour is a paler red, and that it's skin is covered with little prominences which render it rough and scabrous to the touch.

Earth-Worms are by some accounted very efficacious in medicine, as diuretics, diaphoretics, and anodynes; they are also esteemed discutient, emollient, and deobstruent: and many are of opinion that they may be prescribed with success in apoplexies, spasms, and other nervous affections; as well as in the jaundice, dropsy, and colick.

ECHENEIS. An appellation given by the ancients to some kinds of the petromyza; and Apian in particular evidently intends thereby to express the common lamprey.

ECHINODERMA. A term by which naturalists frequently express the echini marini, or sea-urchin.

ECHINOPHORA. A name given by Rondeletius to a species of sea-snail of the round-mouthed kind, or class of cochleæ lunares; but this author seems to confound the echini with his Echinophora.

ECHINUS MARINUS, or SEA-URCHIN. A genus of animals having their bodies covered with a sutured crust, who are often furnished with moveable spines, and whose mouths are quinquevalve and placed beneath.

The Echinus, on a slightish inspection, may be compared to the husk of a chestnut, being at once round, and beset with a great number of bony prickles projecting on every side. The mouth is placed downwards; and the vent is situated above. The shell, which is a hollow vase resembling a scooped apple, is filled with a soft muscular substance, through which the intestines wind from the bottom to the top. The mouth is large, red, and furnished with five sharp teeth, which are

E C H

easily discerned; the jaws are strengthened by five small bones, in the centre of which there is a small fleshy tongue, whence the intestines make a convolution of five spires round the internal sides of the shell, and end at the apex, where the excrements are excluded. But, what constitute the most remarkable parts of the conformation of this animal, are it's horns and spines, which point from every part of the body, and serve at once as legs, arms, and instruments of annoyance and defence. Between these horns there are also spines, which are not endowed with such a share of motion. The spines are hard and prickly; and the horns, which are long and soft, and never seen but in the water, are protruded and retracted like those of the snail, being concealed at the bases of the spines when not wanted for the more immediate service of the animal. All this apparatus, however, is only perceivable when the Echinus is busied in hunting it's prey at the bottom of the water; for, in a very few minutes after it is caught, all the horns withdraw into the body, and the greatest part of the spines drop off.

It is generally supposed, that such creatures as have the greatest number of legs always move the slowest: but the Echinus seems to be an exception to this rule; for, though furnished with upwards of two thousand spines and twelve hundred horns, all serving the purposes of legs, and from their number seeming to impede each other's motion, it runs with no small degree of swiftness at the bottom, and is frequently overtaken with difficulty, but generally at ebb-tide, either by means of an osier basket, or simply with the hand.

Some species of Echini are reckoned as excellent food as lobsters; and their eggs, which are of a deep red colour, are considered as a peculiar delicacy: but the flavour of others is very indifferent; and, except in the Mediterranean seas, they are seldom sought for but as objects of curiosity.

ECHINUS, EDIBLE. This species, which is of an hemispherical form, covered with sharp strong spines above half an inch long, commonly of a violet-colour, moveable, and adherent to small tubercles elegantly disposed in rows, is often found in dredging, and frequently lodges in cavities of rocks just within low-water mark.

Echini of this sort at present constitute the food of the poor in many parts of Britain, and also of those of the first quality in some foreign countries. In ancient times they were accounted very delicious, being usually dressed with vinegar, homed wine, parsley, and mint; and, according to Athenus, were perfectly agreeable to the stomach. They likewise composed the principal dish at the famous supper of Lentulus, when he was made Flamen Martialis, or Priest of Mars; and, from some of the concomitant dishes, they appear to have been intended as a whet to the appetites of the holy personages, priests, and vestals, invited to this banquet, against the second course.

ECHINUS, CORDATED. This animal, agreeably to it's name, is of a cordated shape, gibbous at one end, and marked with a deep sulcus at the other covered with slender spines resembling bristles; and the shell is extremely fragile.

ECHINUS, OVAL. This species, which is oval and depressed, is of a purplish colour on the top marked with a quatrefoil, the intermediate spaces being tuberculated in wavy rows; and the lower side is studded, and divided by two smooth spaces. This shell, which measures four inches in length,

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EEL

and, when cloathed, is covered with short thick-set bristles mixed with some very long ones, is found near Weymouth. Borlase has given a figure of an *Echinus* which resembles the above; but neither the print nor description enable us to determine whether it is of the same or a distinct species.

An infinite variety of *Echini* are found in a fossil state, of which only a few have yet been discovered recent: however, the different genera of these fossil shells are usually known among authors under the names of *spatagi*, *cordati*, *galeati*, *pileati*, *discoides*, *ovarii*, and *pentaphylloides*.

EDOLIO. A bird peculiar to the Cape of Good Hope; so called from it's repeating distinctly the word *Edolio*. It exactly resembles the cuckoo both in shape and size, and is frequently seen on thick bushes and high trees; but by what name it is known among the native Hottentots, we have not learned.

EEL; the *Muraena Anguilla* of Linnæus. The Eel, from many parts of it's natural history, appears to be a very singular fish, and in some respects to border on the nature of the reptile tribe. During the night it frequently quits the water, it's native element, to wander in meadow-grounds, not only for the sake of changing it's habitation, but also of feeding on such snails as it meets with in it's passage; and in winter it buries itself deep in the mud, where, like the serpent race, it continues in a state of torpidity. So very impatient of cold are these creatures, that, in severe weather, they will eagerly take shelter in a wisp of straw flung into a pond; which device has sometimes been practised in order to catch them: and Albertus informs us, that he has known Eels betake themselves, during the brumal season, to a hay-rick, where they perished through excessive cold.

Morton, in his History of Northamptonshire, observes, that there is a species of small Eels, having smaller heads and larger mouths than the common kind, found in clusters at the bottom of the River Nyme, and hence called *Bed-Eels*: these are frequently roused from their retreats by violent floods, when their stomachs are always found wholly destitute of meat. This circumstance bears such an analogy to the clustering of blind-worms in their quiescent state, that it is undoubtedly a farther proof of a partial agreement in the nature of the two genera.

There is scarcely any animal whose generation has so much puzzled and perplexed the systems of the learned and inquisitive as this. Aristotle first broached an opinion, that Eels were of the common gender, and that they did not propagate their species like other animals, but were equivocally engendered by the mud. Wild and absurd as this hypothesis must appear to every rational mind, it nevertheless met with many abettors in more enlightened ages. Modern enquirers, however, have been so well instructed in the system of animal generation by the works of Swammerdam, Lewenhoeck, Malpighi, Redi, Ray, and numerous other respectable writers on the same subject, that there now remains no doubt that all animals are produced by the contact of parents like themselves: and the phenomenon of Eels being found in new ponds is easily accounted for, if we credit Dr. Plot, who confidently asserts, that whole droves of them will sometimes leave one ditch or pond, and cross the meadows, as well in search of food, as of new retreats. We are well aware, that the Eel retains it's vital principle longer than any other fish, after

EEL

being taken out of the water; nor is it difficult to conceive, that it may, without any inconvenience, spend so much time out of that element as is necessary for the passing from one piece of water to another contiguous one: nor, when a number of these creatures have found a new pond, is it at all surprizing that they continue in it, since they feed on worms and other insects, of which it is extremely probable they find abundance in such parts of the earth as have been newly turned up, and where they have not preyed before.

But though the literati are now generally agreed that Eels are produced, like other animals, by parents of their own kind, still there remain many doubts concerning the manner in which this business is effected. Some allow Eels to be like the generality of other animals of distinct sexes in the different individuals; while others affirm that they are all hermaphrodites, each possessing the parts of generation of both sexes. Rondeletius asserts, that they are of different sexes; and Mr. Allen, who has published a very curious paper concerning them in the Philosophical Transactions, is of the same opinion; both affirming that the parts of generation are perceptible on a careful inspection, and some discoverable to be males, and others females: but these members (they tell us) being buried in a vast quantity of fat, are very difficult to be discerned; and consequently Aristotle, who was unable to discover them, concluded that they did not exist at all, which opinion his followers have adopted.

Among those authors who allow Eels to be produced, like other creatures, from animal parents of different sexes, some are of opinion that they are viviparous; others, that they are oviparous. But Mr. Chartwind seems to have conclusively determined this great argument, by observing, that if the aperture under the belly of the Eel, which appears red during the month of May, be cut at that time, the young Eels will be observed to come forth alive after the operation. Lewenhoeck informs us, that he found an uterus in every Eel which he examined, and therefore concludes them to be hermaphrodites: he also conjectures that they have no male parts of generation like those of other animals; but that the office of these is performed by a fluid analogous to the male seed of animals, contained in certain glands situated on the inside of the uterus itself. However, it has been sufficiently proved by modern experiments, that the immediate generation of Eels is effected in the ordinary course of nature, and that the animals themselves are viviparous.

The Eel is extremely voracious in it's appetite, as well as destructive to the fry of fish. The eyes are placed at a small distance from the end of the nose; the irides are tinged with red; the teeth are small, sharp, and numerous; the under jaw is longer than the upper; beneath each eye there is a minute orifice; and at the extremity of the nose there are two others, small and tubular. The two pectoral fins are rounded at their ends; a narrow fin extends along the back, and unites with that of the tail; the anal fin joins in the same manner beneath; and the orifice of the gills is situated behind the pectoral fin.

Eels vary in their colours, from a sooty hue to a light olive green; and those which are called silver Eels have white bellies, and possess a remarkable brightness throughout.

There is a variety of this Eel known in London and it's vicinity by the name of the *grig*, and at Oxford

EEL

Oxford by that of the grig or glut. The head is larger, the nose more blunt, and the skin thicker, than in those of the common sort; neither is it so fat, so large, nor so much esteemed, as the common Eel, which sometimes weighs upwards of twenty pounds; and notwithstanding it is the most universal of all fish, it is very rarely found in the Danube, though very common in the lakes and rivers of Upper Austria. It appears that the Romans paid little regard to these fish; but the luxurious Sybarites were so fond of them, that they exempted those who sold them from every kind of tribute.

Those Eels which are caught in rivers, or other clear running waters, are generally preferred. Boerhaave says, that no fish whatever have more acrid galls than Eels; and farther observes that, with an admixture of those of the Eel and the pike made into pills, he hath cured many ricketty children who were afflicted with hard and swelled bellies.

The Eel, though it generally lives in fresh water, sometimes enters the sea, and returns back again to it's former abode. It delights in pure running streams; and, if confined to muddy water for any length of time, becomes lean, flaccid, and at last dies. Indeed, it cannot support any considerable difference of living; for, were it to be conveyed, even in the summer season, from a moderately tepid to a more frigid stream, it would soon perish. It feeds on roots, herbs, fish, insects, and whatever else it meets with at the bottoms of rivers: and Athenæus gravely informs us that, in a certain country, he has known Eels so far tamed, as to approach and seize any food presented them with the hand.

Eels generally live to the age of seven or eight years, and afford an excellent aliment: their flesh, which is tender, soft, and nourishing, contains many oily and balsamic parts; but it has also others that are of a dull, viscous, and gross nature, and render it hard of digestion. These fish may be roasted, fried, broiled, or boiled: but those which are roasted appear to be the most wholesome; for this reason, because they are thereby more divested of their viscous phlegm than by the other modes of dressing. Their fat is esteemed excellent in removing marks of the small pox from the face, in curing the piles, and in causing the hair to grow. A kind of mucilage is made of their skins by steeping and boiling them in water, which is frequently applied to swellings, in order to soften and dissolve them; and it is also serviceable in the hernia.

EEL, CONGER. This species, with regard to it's general conformation, resembles the common Eel; but differs materially from it in size, some Congers being several yards long, and as thick as a man's thigh: the colour of the back also is lighter than that of the common Eel, being more of an ash; the belly is whiter; the eyes are larger in proportion; the irides are silvery; and on the sides there is a straight, white, broadish line, seemingly composed of a double row of points, which reaches from the head to the tail. The upper edge of the dorsal fin is blackish throughout it's whole length; and the end of the upper chap, or snout, is furnished with two short horns, or tubes, which abound with a mucilaginous fluid. Some suppose the flesh of the Conger to be as sweet and salubrious as that of the common Eel; but it is undoubtedly neither so delicious nor so easily digested. See CONGER-EEL.

EEL, SAND, or LAUNCE. This fish, like the

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common Eel, is long and round, but it seldom exceeds a foot in length: it is blue on the back, and of a silver-colour on the belly and sides; it has a sharp snout, and a wide mouth destitute of teeth; the lower jaw is longer than the upper; and it has no scales. A long fin extends along the back within a small space of the tail; and there are a pair of fins at the gills, but none on the belly. These fish generally lie half a foot deep in the sand; and, when the tide ebbs, the fishermen on the Cornish coast and the Isle of Man angle for them with hooks constructed for that purpose. Their flesh, which is very sweet and salubrious, proves an excellent bait for other fish.

There is another species of Sand-Eel, which differs from the former in having two fins on it's back, whereas that has only one.

EEL, INDIAN. An East Indian fish, the *anguilla Indica* of authors: of which there are two species; the one being entirely spotted with brown, and the other of a fine yellow colour streaked with red. The flesh of both is reckoned unwholesome.

EEL, SEA. A fish commonly found among rocks about the shores of many parts of the East Indies. It is of a dusky brown colour, variegated with rhomboidal spots not very unlike those on the skins of snakes; the anterior part of the body is thin and slender, the hinder part being very thick; the nose is long; the mouth is large, and commonly open; and the teeth are very sharp and small.

Sea-Eels grow excessively fat, and are very wholesome and delicious food; though it is said that those who kill them are affected with tremors, and sometimes with drowsiness; but which generally go off without any material injury.

EEL, ELECTRIC. See RAY, ELECTRIC.

EEL, MICROSCOPIC. The long-bodied animalcules discovered by the help of microscopes in vinegar, four paste, and many other substances, have, on account of their figure, been distinguished from the rest of the microscopic animalcules by the name of Eels: these, as well as the other kinds, have been supposed by the most judicious naturalists to be produced from the eggs of other animalcules of the fly kind floating in the air; but those in paste are discovered to be viviparous animals, which produce living creatures of their own shape. In order to be always furnished with these minute animals for microscopic observations, such paste as bookbinders commonly use, and of a moderate consistence, should be exposed to the air in an open vessel, and prevented from becoming hard or mouldy by being occasionally stirred. After some days, it will turn sour; when, if attentively examined, multitudes of extremely small, long, and slender animalcules, may be discovered in it, which will daily grow larger, till at length they will be perceptible by the naked eye. In order to promote their growth, a drop of vinegar may be sometimes poured on the paste, by which means they will be preserved throughout the whole year. They may be singly applied to the microscope on a single talc or isinglass, a small drop of water being previously put on it, that the animalcule may swim therein; and then the internal motion of it's bowels may be plainly perceived.

On cutting one of these Paste-Eels across the middle, a long and slender tube may be observed to shoot out from each of the divided ends, and a number of seeming ova issue from this; but these on being more minutely inspected, will appear to

be living Eels of different growths, all included in their proper membranes: some of them move but slowly; others coil and uncoil themselves pretty briskly; while the most mature are seen to make strenuous efforts towards obtaining an enlargement from their enveloping membranes, and at length succeeding, to swim away like their parent animal. The tube extended each way, on dividing the body, is properly the uterus of the creature, which in the larger Eels is full of dark spots, being the embryo Eels; and these spots are again observable in the young ones as soon as they are produced.

EEL-POUT. The English name of the *mustella fluviatilis*, a fish of the gadus kind, in the Ar-tedian system; and distinguished from the others by the name of the bearded gadus with two fins on the back and jaws of equal lengths.

The Eel-Pout, which is caught in the Trent, and many other rivers of England, is in some places called the burbot, and esteemed very delicate food. When full-grown, it is commonly about fourteen inches long, slender, and somewhat of the shape of the common eel; but too short, in proportion to its thickness, to be truly so. Like the eel also, it is very soft and slippery, and covered either with a slimy matter or extremely minute scales. The colour is that of the tench; the head is large and flat; the nostrils are small and round; and the jaws are beset with very small teeth, rough as a file to the touch; besides which, there is a semicircular rugged space in the palate. There are two fins on the back; and there is one on the belly which reaches from the anus to the tail. A small beard rises from the extremity of the lower jaw; there are two other beards between the nostrils and the end of the snout; and the gills are seven in number.

There is another variety of Eel-Pouts, which Linnæus describes as a species of blennii: they are viviparous, bringing forth two or three hundred young at a time a little after the depth of winter; and are very numerous in the River Esk, in York-shire; but their flesh is not much esteemed. See **BLENNY, VIVIPAROUS.**

EFT. An animal very common in England; called by some the newt, and the swift; and, by others, the common lizard. The Eft has an oval obtuse snout; its back is of a rusty iron-colour; and its feet, which have each five toes, are armed with very sharp small claws: that toe which corresponds with the fore-finger in the human race is the longest of all; and that which answers to the thumb is placed lower.

Great Britain affords several species of Efts; namely, the common land Eft, with a black spotted belly; the snake-like Eft, which frequents heaths; the small brown land Eft; the yellow scaly land Eft; and the brown and black spotted water Eft: the two last of which are mentioned by Plot in his History of Staffordshire.

The land Eft, or, as it is frequently called by naturalists, the land salamander, has something very remarkable in its exterior coat: its skin often appears dry, like that of the lizard; but it also frequently seems as if covered with a fine shining hard varnish, the change from one state to the other being usually performed in an instant; and it sometimes, on being barely touched, becomes entirely wet. There is also under the skin of this animal a sort of milky liquor, which, on the body's being pressed, is spouted out to a considerable distance. The passages for the escape of this fluid are a vast number of pores or holes, many of which are pre-

ceptible to the naked eye; and probably the first-mentioned liquor, which covers the skin in the manner of a varnish, may be the same with this, its white colour not being distinguishable when thinly spread over the creature's body. This milky substance bears a strong resemblance to the juice which the tithymals, and many other succulent plants, afford when either cut or broken; its taste is intolerably acrid and styptic; and though the tongue receives no injury from touching it, the sensation is nevertheless so violent, that the person affected is very apt to dread the consequences.

An opinion generally prevails, that this animal is of a poisonous nature; and the fabulous salamander of the ancients seems to be of the same genus, if not the same animal. Maupertuis, in order to convince mankind of the truth of these remarkable particulars, caused a large number of Efts to be collected; which the country people, who had caught them near the bottoms of old walls, handled with as much caution as if they had been vipers. From this, as well as other experiments, it appears very evident, that the stories of the Eft's being a poisonous animal are as vague and groundless as those of its being able to exist in the fire. Some remarkable circumstances, however, the above gentleman observed in his dissection of these animals; namely, that in several of the females there were at the same time clusters of eggs and young ones in an animated state; that these eggs formed bunches resembling those of the ovaries of birds; that the young were contained in two tubes, the coats of which were perfectly transparent; and that in one female only he counted fifty-four young, all living and vigorous.

The water Eft furnishes the curious with excellent opportunities of observing the circulation of the blood by means of the solar microscope. By the help of this instrument, the vessels are perceived to be beautifully delineated on the skin; and the tide of blood in the large ones to be equal to that of the stream of water which, in hydrostatical experiments, is ejected out of a vessel by condensed air. In either of these cases, no appearance of drops of separate globules can be discerned, but the whole forms one continuous body. In the lesser vessels, these little globes are observed to pass along very swiftly, but evidently to separate from each other.

It is very remarkable, that in the tail of this animal there seems to be a greater number of vessels than are immediately necessary for the circulation of the blood; for, when thus examined, there will often appear two parallel vessels, in one of which only the circulation is performed, and this successively in one and the other of the vessels, the tide often leaving the one wholly empty which had just before been full and circulating in the other.

In the stomachs of a certain species of water Efts found in Brazil, Mexico, and Cuba, particular substances called Eft-stones, supposed to be endowed with extraordinary virtues, like the bezoars in other animals, are said to be lodged; but though these stones are celebrated by Ximenes, and other authors who have been on the spot, and have had every opportunity of searching into the reality of their origin, to my full doubt whether any such substances were ever actually found in these animals. Redi supposes them to have been once the teeth, or some other parts, of fishes dug out of the earth; and he observes that, having tried some which bore that name, he found no visible effect in any of them.

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EGG, POACHED. A curious species of shell of the semiporcellanæ genus, or shells resembling cypræ or cowries.

EGG, SEA. An appellation frequently given to the echinus marinus, or sea-urchin. See ECHINUS MARINUS.

EGRET; the *Ardea Garretta* of Linnæus. This very beautiful bird, to which some naturalists give the name of the lesser white heron, is now but rarely seen in England: though it appears from unquestionable evidence, that Egrets were formerly very numerous; for, in a bill of fare at the famous feast of Archbishop Nevill, mention is made of no less than one thousand of them. Perhaps the great esteem in which they were held at that period, may have occasioned their extirpation in this island; but they are still very common in the southern parts of Europe, where they frequently appear in numerous flocks.

The Egret measures about twenty-four inches in length, and weighs about a pound. The bill is black and slender; the space about the eyes is naked, and green; the irides are of a pale yellow colour; and the head is adorned with a beautiful crest, composed of some short feathers, and two long ones hanging backwards, which are upwards of four inches in length. The whole plumage is of a resplendent whiteness; the feathers on the breast and the scapulars, which are extremely delicate, long, slender, and unwebbed, hang in the lightest and loosest manner imaginable; and the legs are a dark green almost approaching to black. The scapulars and the crest were formerly much esteemed as ornaments for caps and head-pieces: hence the Aigrette and Egret came to signify an Ornament for a Cap; though, according to the etymology of Belonius, the word was originally derived from *Aigre de l' Aigreur de sa Voix*.

EINBLINDER. The name of a species of blind lamprey, called by naturalists *lampetra cæca*. It is very small, not exceeding the common dew-worm either in length or thickness. It is also destitute of scales; but the body is divided by annular lines into no fewer than eighty-four-rings. The mouth, which is situated in the under-part of the head, is round, and always open; in the middle of the head there is a cavity, as usual in the lamprey kind, for the admission of water; and on each side there are seven gill-holes. This animal has only one long fin, which runs along the ridge of its back.

ELAPHOCAMELUS. A term by which several authors express the Peruvian camel, usually called the llama, and employed in that country as a beast of burden.

ELAPS. A name sometimes given to the elops, a remarkable kind of serpent found in the Isle of Lemnos. See ELOPS.

ELATER. A genus of insects of the order of coleoptera, having setaceous antennæ; which, when laid on their backs, enable them to leap with great force and agility: and from this circumstance they receive their name. There are various species of these four-winged flies, distinguished by their different colours.

ELATER, MIXED BROWN, GREEN, AND BRASSY. This species is small, and of an oblong shape; the breast and cases of the wings of the male are very bright, strongly tinged with green; and the antennæ are a little pectinated on their edges. The colour of the female is more yellow; the breast is broader and more glossy; and the feelers are

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without any pectination. This insect usually makes its appearance in the month of June.

ELATER, BLACK, RED-BREASTED. This very minute insect is entirely of a black colour, except some part of the breast, which is red, and describes the figure of a crescent, the horns of which are turned towards the head; and also the cases of the wings, which have a blueish cast. It is very common in pasture-grounds, and under hedges, near London.

ELATER, BROWNISH BLACK. This species, which is pretty large, has an oblong body; the colour is a brownish black throughout; the head is small; and the cases of the wings, which are smooth, exhibit somewhat of a glossy appearance.

Linnæus gives this insect the name of the brown notopeda; and likewise makes mention of the Black Elater with a hairy breast; the Black Elater with a red breast, already described; and the Black Elater with red cases to the wings.

Other zoologists enumerate the Greenish Brassy-coloured Elater with yellow wings; the Black Elater with blue cases to the wings; the Black Elater with red wings on the back part; the Black Elater having the cases of the wings livid on their exterior edges; the Red-breasted Elater with red cases to the wings; and the Black Elater with brown cases to the wings, and the feelers and legs of a reddish brown colour.

ELAWANDUM. A remarkable species of monkey very common in the Isle of Ceylon. Its hair is either whitish or of a pale grey colour; and it has a long beautiful black beard depending from its chin.

ELDRIENE. An appellation given by some authors to the small fish called in England the minnow; and by others varius, from the assemblage of different colours on its sides and belly.

ELECTRIC FEE. See GYMNOTUS.

ELECTRIC FISH. See TORPEDO.

ELEPHANT. In the Linnæan system of zoology, a distinct genus of the brutæ, in the class of mammalia; the distinguishing characters of which are, that it has no cutting-teeth; that the canine or dog-teeth of the upper jaw are exceedingly long; and that it has a very long flexible proboscis, and a body almost naked.

The Elephant, which is the largest of all land animals, is no less remarkable for its docility and understanding than for its size. All historians are agreed that, next to man, the Elephant is the most sagacious of all creatures; notwithstanding which, were we to form our ideas of its capacity from its external appearance, we should be induced to conceive a very mean opinion of its abilities. Its huge body, covered with a callous hide, without hair, its large misshapen legs, which seem scarcely formed for motion; together with its little eyes, large ears, and long trunk; all unite in giving it an air of extreme stupidity: but when we examine its history, our prejudices banish; and, when we consider the various advantages it derives from its clumsy conformation, our surprise increases.

Though it is altogether impossible, by any description, however elaborate, to convey an adequate idea to the reader of this vast animal, which is said to grow from seven to fifteen feet high; it may in general be observed, that it has a long trunk, composed of multitudes of rings, pliant in every direction, and terminated by a single moveable hook, which answers the purpose of a hand in conveying any substance to its mouth. The forehead is very elevated.

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elevated; the ears are long, broad, and pendulous; the eyes are extremely small; the body is round and full; the back rises in a kind of arch; and the legs are thick, clumsy, and shapeless. The hide, which is of a dusky colour, is furnished with only a few scattered hairs, but replete with scratches and scars acquired in its passage through woods and thickets; the tail, like that of the hog, is terminated by a few long hairs of an extraordinary size; the feet are undivided, but the margins are inclosed by five round hoofs; and the whole animal is short in proportion to its height. The female is less than the male; and the udder hangs between the fore-legs.

Though the Elephant is the strongest, as well as the largest, of all quadrupeds, in a state of nature it is neither fierce nor formidable: pacific, mild, and brave, it never abuses its strength, but exerts it either in its own protection or that of the community. In its native deserts, it is seldom perceived alone, but appears to be a sociable and friendly creature. The veteran of the company always conducts the band, that next in seniority bringing up the rear; the weak and the infirm are placed in the centre; while their offspring are borne by the females, and prevented from falling by means of their trunks: however, this order is only maintained either during dangerous marches, or when these animals are desirous of feeding in cultivated grounds. In forests and other solitudes, they move with less precaution, though without ever separating, or even removing so far asunder as to be incapable of lending each other any requisite assistance.

Nothing hardly can be more formidable than a drove of Elephants, as they appear at a distance in an African landscape: wherever they come, the forests seem to sink beneath them; in their passage, they bear down the branches on which they feed; and if they enter an inclosure, in a very few minutes all the labours of agriculture are cut off and disappear: such invasions are the more terrible, as they cannot be repelled; for an army of men would scarcely be adequate to the task of attacking their united numbers. Sometimes, however, it happens that one or two of them are found lingering behind the rest; and against these only the power and stratagems of the hunters can be exerted with effect; for an attempt to molest the whole body would inevitably be fatal, as they rush directly forward on the person who offers to insult them, strike him with their tusks, seize him with their trunks, toss him into the air, and watching his fall, trample him to death. But they are thus dreadful only when incensed, never offering any personal injury when suffered to feed unmolested. It is even said that they retain a sense of injuries received; and accordingly, when once provoked by man, they seek every future occasion of revenge, smelling him with their long trunks at a distance, following him with all their speed on the scent, and (though slow to appearance) soon overtaking and destroying him.

Elephants, in their natural state, seem to delight in frequenting the banks of rivers and the deepest vallies, and in refreshing themselves in the most shady forests and wet situations. Indeed, they cannot exist at a great distance from the water, which they always disturb before drinking. They often hold their trunks with this element, either for the purpose of cooling that organ, or of diverting themselves with spouting it forth in the manner of a fountain. They seem to be equally affected by

E L E

the extremes of heat and cold; and, in order to avoid the former, frequently take shelter in the most obscure recesses of forests, or plunge into the water, and swim from the continent to islands at the distance of several leagues from the shore.

These creatures subsist chiefly on vegetables, and seem to entertain a perfect abhorrence for animal food. When any individual of their society happens to discover a spot of good pasture, he invites his companions to partake of the repast; though it must be a very extensive tract indeed that can furnish provision for the whole band; and as their broad heavy feet sink deep at every step, and destroy much more pasturage than they themselves devour, they are on that account frequently compelled to change their quarters, and even to migrate from one country to another. The Indians and negroes, who are often incommoded by these visitants, endeavour to keep them at a distance by making loud noises, and kindling large fires contiguous to their cultivated grounds: but such precautions do not always succeed; for troops of them often break through their fences, destroy their whole harvest, and overturn their little habitations; and, when fully satiated, march back again to the woods in a very regular manner.

Such are the habits of the Elephant, considered in a social light: but, if we regard it as an individual, we shall find its powers still more extraordinary; for, notwithstanding its very awkward and unpromising appearance, it possesses all its senses in great perfection, and is capable of applying them to more useful purposes than any other quadruped. This animal, as already observed, has very small eyes, when compared to the enormous bulk of its body; but, though their minuteness may at first sight carry an appearance of deformity, when we examine them more closely, they exhibit a variety of expression, and discover the various sensations with which the creature is actuated: it turns them with a pleasing attention to its master, seemingly as if to reflect and deliberate; and, as its passions follow each other in slow succession, their various workings are distinctly observed.

Nor is the Elephant less remarkable for its quickness of hearing: its ears, which are extremely large, even more bulky in proportion than those of the ass, are usually dependent, but capable of being elevated and moved at pleasure; and with them the animal wipes its eyes, in order to repel the dust and flies which would otherwise greatly incommode them. It appears to be exceedingly delighted with music; and very readily learns to beat time, to move in measure, and even with its voice to accompany the drum and trumpet. This animal's sense of smelling is not only very exquisite, but is in a great measure adapted to the same odours which are grateful to mankind; for the creature gathers flowers with apparent pleasure and attention, picking them up one by one; and afterwards unites them in a nosegay, seemingly charmed with their perfume. The orange-flower in particular appears to be peculiarly agreeable both to its taste and smell; for it strips the tree of all its verdure, and eats every part of it, even to the very branches: it also searches out the most odoriferous plants which grow in the meadows, and, with respect to the woods, it shews a predilection for the cocoa, the banana, the palm, and the figo trees; the shoots of which being tender, and filled with pith, it not only devours the leaves and fruit, but also the trunk, and the entire plant to its very root.

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But as to the sense of feeling, the Elephant exceeds the whole brute creation, and perhaps even man himself. The organ of this sense lies solely in the trunk, an instrument peculiar to this animal, and which answers all the purposes of a hand: this trunk, properly speaking, is only the snout extended to an unusual length, hollow like a pipe, and terminating in two openings or nostrils like those of the hog. The trunk of an Elephant of the height of fourteen feet, is about eight feet in length, and five and a half in circumference at the mouth, where it is thickest; it is hollow throughout its whole length, but has a partition which runs from one end to the other; so that, though it appears externally like a single pipe, it is internally divided into two. This fleshy tube is composed of nerves and muscles, covered with a skin of a blackish colour, like that of the rest of the body; it is capable either of extension or contraction, of being bent or straightened; embracing any substance to which it is applied with the utmost pliancy; and yet so very strong, that nothing can be torn from it's gripe. To aid the force of this grasp, there are several little eminences, like the feet of caterpillars, on the under-side of this instrument, which unquestionably contribute to the sensibility of the touch, as well as the firmness of the hold. Through this trunk the animal breathes, drinks, and smells, as by means of a tube; and, at it's very extremity, exactly above the nostrils, there is an extension of the skin, about five inches long, which is shaped like a finger, and in fact answers all the purposes of that member; for, together with the rest of the extremity of the trunk, it is capable of assuming different forms at pleasure, and consequently of being adapted to the minutest objects. By the help of this, the Elephant is enabled to pick up even a pin from the ground, to untie the knots of a rope, unlock a door, and write with a pen. 'I have seen,' says *Ælian*, 'an Elephant writing Roman characters on a board, in a very orderly manner, his keeper only shewing him the figure of each letter. While thus employed, the eyes might be observed studiously cast down on the writing, and exhibiting an appearance of great skill and erudition.' It sometimes, indeed, happens, that the object proves too large for the grasp of the trunk; in which case, the Elephant makes use of another expedient as admirable as the former: it applies the extremity of it to the surface of the object; and sucking up it's breath, lifts and sustains whatever weight the air is capable of keeping suspended. Thus this instrument is conducive to almost every purpose of the creature's life; it proves an organ of smelling, touching, and suction; and not only provides for the necessities and conveniences of the animal, but also for it's ornament and defence.

But though the Elephant derives so many advantages from it's trunk, with respect to the rest of it's conformation it is helpless and unwieldy: it's neck is so short, and it's head turned with such difficulty, that the animal must wheel round it's whole body before it can discover an enemy from behind. The hunters, who attack it from that quarter, generally escape the effects of it's indignation by this easy manœuvre, and gain time sufficient to renew their assaults while it is employed in turning it's ponderous carcass in order to face them. It's legs, indeed, are not so inflexible as it's neck, though they are comparatively stiff, and will not bend without evident exertions: those before seem longer than the hinder ones, but only to

E L E

appearance, for, on being measured, they are found equal, if not shorter; their joints are placed nearly in the middle, like the knees of the human species; and the great bulk which they are destined by nature to support makes their flexure very clumsy. While young, the Elephant bends it's legs, both to lie down and to rise: but, when it either grows old or infirm, this act is not performed without human assistance; and consequently it becomes so very inconvenient to the animal, that it rather chuses to repose standing. The feet which support these massy columns form a base scarcely broader than the legs they sustain; they are divided into five toes, which are situated beneath the skin, so that none of them appear to the eye, a kind of protuberances only being observable, which vary in number from three to five: but though the apparent toes vary, the internal ones are constantly the same; and the sole of the foot is furnished with a corneous skin, which compleatly invests the whole under-part of the foot.

In addition to the incumbrances of the Elephant, may be subjoined it's two enormous tusks, which being useless for the business of mastication, serve only as weapons of defence: these, as the animal advances in years, become so heavy, that it is sometimes obliged to have holes dug in the walls of it's stall, for the purpose of resting them, as well as easing itself of the fatigue of their support. It is well known to what an amazing size these tusks generally grow, many of them being above six feet in length. Some authors have supposed, that these are rather the horns than the teeth of this animal; but, besides their greater similitude to bone than horn, they have been indisputably proved to grow from the upper jaw, and not from the frontal bones, as some have roundly asserted. It has been also affirmed, that these tusks are shed in the same manner as stags drop their horns; but, from their solid consistence, as well as accidental defects, which often appear to be the result of a slow decay, it is extremely probable that they are as fixed and permanent as the teeth of other animals. Certain, however, it is, that this creature never drops them in a state of servitude, but retains them till they become cumbrous and inconvenient to a very high degree.

As to other parts of it's conformation, this animal is equally singular. The lips and tongues of other creatures serve to imbibe their drink or their food; but, with respect to the Elephant, they are totally unserviceable for those purposes; and it not only gathers it's aliment with it's trunk, but also supplies itself with water by the same means. When it eats hay in a domestic state, it lays hold of a small wisp with it's trunk, turns and shapes it with that instrument for some time, then guides it to it's mouth, and afterwards chews it with it's grinding-teeth, which are exceedingly large. When this quantity is sufficiently masticated, it is swallowed, and never ruminated again, as is the case with cows or sheep, the stomach and intestines of the Elephant bearing a stronger resemblance to those of the horse. It's manner of drinking is equally extraordinary: it dips the end of it's trunk into the water, and thereby sucks up as much at a time as fills that great fleshy tube compleatly, then raising it's head, and turning the point into it's mouth, it drives it below the aperture of the trunk-pipe. The trunk being in this position, and full of water, the creature blows strongly into it at the other end, whereby that fluid is forced out

the throat, down which it is heard to pour with a loud jingling noise. From this mode of receiving suction, some have been led into an opinion that the young Elephant sucks the dam with it's trunk, and not with it's mouth; but this is a fact which no traveller has hitherto had an opportunity of ascertaining.

The hide of the Elephant is as remarkable as any other part. It is not covered with hair, like the generality of quadrupeds, but is almost bare: a few bristles, indeed, are scattered over the body; but in general the hide is dry, rough, and wrinkled, and resembles more the bark of an old tree than the skin of an animal. This becomes thicker every year; and, by a gradual addition of substance, it at length contracts that disorder well known by the name of the elephantiasis, or Arabian leprosy; a disease to which man himself is obnoxious. For the prevention of this malady, the Indians rub the Elephant with oil, and frequently bathe it, in order to preserve the pliancy of the skin. Besides the inconveniences incident to this disorder, others arise from the extreme sensibility of those parts which are not wholly callous: on these flies settle in prodigious numbers, and unceasingly torment the animal; to repel which, it exerts every art in it's power, using not only it's tail and trunk in the natural manner, but even laying hold of the branches of trees, in order to beat them off; and, when these expedients fail, it often gathers up the dust with it's trunk, and spreads it over the sensible parts.

Water seems as necessary to this animal as food itself. When in a state of nature, the Elephant seldom quits the banks of rivers, and often immerses itself in the water as high as it's belly. In a state of servitude, the Indians are particularly careful to provide the creature with a proper supply of that element; they wash it with great address; afford it every convenience for assisting itself; and, after smoothing it's skin with a pumice-stone, rub in oils, essences, and odours.

Considering the strength, sagacity, and obedience, of this animal, and the various beneficial purposes which it is destined to fulfil, it is by no means surprizing that it should be taken into the service of man: accordingly, we find that this creature, from time immemorial, has been employed either for the purposes of war, labour, or ostentation; to increase the grandeur of oriental monarchs, or to extend their dominions.

Hitherto we have considered the Elephant in it's natural state: but we shall now regard it in a different point of view; namely, as taken from the forest, and reduced to the service of man. We are to behold this brave, but harmless quadruped, learning the arts of mankind, and instructed by him in all the horrors of war, massacre, and devastation; and to observe this half-reasoning animal led into the field of battle, and wondering at those tumults, and that martial fervour, which it is itself taught to increase.

The Elephant is an inhabitant of Africa and Asia only; and, in most parts of the former, it still retains it's native liberty. The savages of that quarter of the world, instead of attempting to subdue this powerful creature to their necessities, are happy in being able to protect themselves from the effects of it's fury. Formerly, indeed, while the Carthaginian empire was in it's splendor, Elephants were employed in war: but this was only a transitory gleam of human power in that division of the globe; the

native of Africa have long since degenerated, and the Elephant is at present only known among them by it's frequent devastations. However, no Elephants are even now found on this side of Mount Atlas; though beyond the River Senegal, and in the internal parts of the country, they are prodigiously numerous. In these extensive and unpeopled regions, they seem, in conjunction with other wild beasts, to maintain an undisturbed dominion: they appear to be but little apprehensive of man; and, seemingly sensible of his impotence and their own power, they often ravage his little labours, and treat him with the same haughty disdain as they do other animals.

But though Elephants are most numerous in Africa, the largest are found in Asia, where they are also rendered subservient to human controul. In Africa, the tallest do not exceed ten feet; while in Asia they are found from ten to fifteen. Their price increases in proportion to their size; and, when they exceed a certain bulk, their value, like that of jewels, rises as the fancy is inclined to estimate. The largest, which are generally destined for the service of princes, are maintained at a very great expence. Their usual colour, as already observed, is a dusky black, but some are said to be white; and these, being reckoned inestimable, are appropriated to the sole use of the monarch, attended on by the nobles, and almost adored by the people. Tachard assures us, that these white Elephants are larger than others; but some authors maintain that they are less; and, from their undoubted scarcity, others have even been induced to question their existence.

The European arts of destruction in war being little known in Asia, there are but few eastern princes who do not maintain as many Elephants as their finances will admit; and on these animals they place their principal dependence during an engagement. For this purpose they are caught wild in their native forests, and tamed; for they never breed in a state of servitude. It is a striking peculiarity in the Elephant, that it's generative powers totally fail whenever it falls under the dominion of man, as if it were unwilling to propagate a race of slaves to increase the pride of the conqueror. Perhaps there is no other quadruped that refuses to generate in it's own native climate, if indulged with a moderate share of freedom; and it is well known that many will naturally copulate in every climate, and under every circumstance. The Elephant alone has never propagated it's kind; and though it has for ages been subject to mankind, the duration of pregnancy in the female still remains a secret. Aristotle, indeed, asserts that she goes two years with young; that she continues to suckle her offspring for three more; and that she brings forth but one at a time: but this philosopher gives us no account by which we can judge satisfactorily of the authenticity of his information. From authorities equally questionable we learn, that the little Elephant is about the size of the wild boar the instant it is produced; that it's tusks are not then apparent; that at the age of six months it is as large as the ox, when it's tusks are pretty conspicuous; and that it continues in this manner, for near thirty years, advancing to maturity. Such information, however, is not supported by proper evidence: and of this we are fully assured; namely, that in order to recruit the great numbers which are annually destroyed in war, the princes of the east are obliged to ransack the forests, as well as to make use of various other expedients, for the attain-

E L E

ment of a fresh supply. Among all those numerous bands, there is not an individual which has not been originally wild, nor one which has not been brought into a state of subjection. Men themselves are often glad to propagate a race of slaves who descend in this wretched state through successive generations; but the Elephant, when under subjection, is invariably sterile: a circumstance which may probably originate from physical causes as yet utterly unknown. In the mean time, the princes of India, having long vainly endeavoured to multiply the breed, have at last contented themselves with separating the males from the females, in order to prevent those accesses of desire which debilitate without multiplying the kind.

In order to catch Elephants wild in the woods, a spot of ground is selected, and surrounded by a strong pallisade constructed with the thickest and strongest trees, and strengthened by transverse bars, which impart a considerable degree of firmness to the whole. The posts are fixed at such convenient distances from each other, that a single person cannot readily pass between them; only one great passage being left open, through which an Elephant may easily enter, and so contrived as to shut of itself whenever the creature has got within the inclosure. In order to allure the animal into this toil, it is previously necessary to discover his retreat in the woods: this being effected, a tame female is conducted near the place, who utters the voice of desire, as instructed by her keeper; which the male instantly answers, and hastens to join her. On this the keeper obliges the female Elephant to retreat, still repeating the same cry, till she has allured the male into the inclosure; the door of which, as before observed, shuts spontaneously the moment he has entered. Still, however, the female advances, iterating her call; while the male pursues her through the inclosure, which gradually becomes narrower, till the unfortunate animal finds himself completely hemmed in, without the power of either advancing or retreating: the female, in the mean time, being liberated through a private door to which she has been accustomed. The male Elephant, perceiving himself thus entrapped, endeavours to effect his escape; and, on the approach of the hunters, all his former desires seem converted into rage: his enemies, however, find means to bind him with cords; and afterwards attempt to soften his indignation, by throwing water on him in great quantities, rubbing his body with leaves, and pouring oil into his ears. Soon afterwards two tame Elephants are introduced; a male and a female; who caress the indignant animal with their trunks, while more water is thrown on him, as well to pacify as refresh him. At last a tame animal, selected from among those whose employment is to instruct fresh captives, is brought forward, and on whom an officer is mounted, for the purpose of inspiring the prisoner with confidence. The hunters then open the inclosure; and, while this creature leads the captive along, two more Elephants are planted on each side, who soon compel him to submit. He is then tied with cords to a massy pillar erected for that purpose, and suffered to remain in that situation one whole day and night. The day following he begins to be somewhat submissive; and, by unwearied assiduity, in the space of a fortnight he becomes as tractable as any of his companions.

The females are generally taken when following the males into these inclosures; and, very shortly after, are employed as decoys to others.

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There are various other modes of catching Elephants, differing according to the abilities of the hunters. The negroes of Africa, who hunt them merely for their flesh and tusks, sometimes take them in pit-falls; and, at others, pursue them through the defiles of mountains, where they cannot easily turn themselves; and thus wound them from behind till they sink through loss of blood.

The Elephant, when tamed, is the most gentle and obedient of all animals. It soon discovers an attachment to its keeper, caresses him, obeys him, and seems to anticipate his desires: it even comprehends the different tones of his voice, so as perfectly to distinguish between those of command, anger, and approbation. All its motions are regulated; and its actions, which seem to correspond with its magnitude, are grave and majestic. It is quickly taught to kneel, in order to receive its rider; it fondles those with whom it is acquainted; salutes such as it is ordered to distinguish; and with its trunk, as with a hand, assists in taking up a part of its load: it suffers itself to be arrayed in harness, seemingly exulting in the fineness of its trappings; it draws either chariots, cannon, or shipping, with surprising strength and perseverance, and even with apparent satisfaction, while it is not beat without a cause, and its master seems to applaud its exertions.

The conductor of the Elephant, who is usually mounted on its neck, guides it with an iron rod, sometimes pointed, and at others bent like a hook; with this instrument it is spurred forwards when either slothful or disobedient; but, in general, a single word is sufficient to put the gentle creature in motion after it is once acquainted with its leader: and, indeed, this acquaintance is often absolutely necessary; for the Elephant frequently conceives such an affection for its keeper, that it refuses to obey the commands of any other person; and we are told that many of these animals have even died with grief, after having, in some sudden fit of phrenzy, destroyed their owners. It has also been asserted, that one of them, which had been trained to draw the cannon of the French forces in India, was taught to expect a certain reward from its conductor on the accomplishment of some arduous and dangerous service; but that, being once disappointed in its expectations, the enraged animal slew him: when his wife, who had been a spectator of the horrid scene, probably instigated either by madness or despair, immediately threw her two little sons at the creature's feet; crying out that, since it had killed her husband, it might also kill the infants. The Elephant, observing the babes in that situation, seemed to make a sudden pause; and, moderating its fury, lifted up the eldest of them with its trunk; and, placing him on its neck, thus adopted him for its conductor, and ever after obeyed him with the most scrupulous punctuality.

Nor are Elephants serviceable only in the military art, and in drawing or carrying burdens; they are frequently introduced into the ranks, and compelled to fight in the most dangerous situations. Formerly, indeed, they were much more used in India than at present. About two centuries ago, the chief dependence of generals was placed on the number and experience of these animals; but since the greatest part of mankind have adopted the use of more fatal though less formidable instruments of war, Elephants are very little used. The princes of India still keep a few of them, either through

E L E

through ostentation, or for the purposes of removing their seraglios; but they are seldom opposed to fire-arms, as they then frequently turn on their leaders. Still, however, in those remote parts of the east, where war is carried on among the natives only, and where the European arts of destruction have not yet been introduced, as in Siam, Cochin-China, Tonquin, and Pegu, these animals are brought into the field, each armed before with coats of mail, and loaded on the back with a square tower containing from five to seven combatants. On the neck sits the conductor; who, goading the creature into the thickest ranks, prompts it to increase the devastation: wherever it advances, no power can withstand its fury; it levels multitudes by means of its enormous bulk, flings some of the antagonists into the air, and crushes others to death under its feet. In the mean time, those who are situated on the animal's back engage their enemies as from an eminence, discharging their weapons with double force, as the weight increases their velocity.

To men unacquainted with the modern arts of war, nothing can be more formidable or irresistible than such a moving machine: the Elephant, thus armed and conducted, raging in the midst of a field of battle, inspires more dread than even those instruments which destroy at a distance, and are frequently most fatal when unseen. This method of combating, however, is more awful than effectual; and polished nations have ever prevailed over those barbarous troops which have either called in the assistance of the Elephant, or attempted to gain the victory merely by a terrific display. The Romans quickly learned the art of opening their ranks, in order to admit the Elephant; and, thus cutting it off from all assistance, quickly compelled its leaders to calm the animal's fury, and to submit. It sometimes also happened, that the creature became impatient of controul; and, instead of assisting, destroyed its conductors. In either case, there was great preparation to very little effect; for a single Elephant is known to require as much daily sustenance as is sufficient for forty men.

At present, indeed, the Elephant is principally used as a beast of burden throughout the whole peninsula of India; and for this employment no animal in nature can be better adapted. Its strength being equal to its bulk, it is capable of drawing with facility what six horses are unable even to move; it can readily carry on its back three or four thousand weight; on its tusks alone it can support near one thousand; and its force may also be estimated from the velocity of its motion when compared to the magnitude of its body. Its ordinary pace is as quick as that of the horse on an easy trot; and, when pushed, it moves as swiftly as that animal at full gallop. It can accomplish a journey of fifty or sixty miles in one day with great ease; and, when hard pressed, almost double that number. Its trot is usually heard at a great distance; and the creature may be easily traced, its impressions on the ground being very deep, and nearly eighteen inches in diameter.

In India, Elephants are also deputed to very disagreeable offices; for, in the courts of the more barbarous princes, they are used as executioners: which horrid tasks they perform with great dexterity; breaking every bone of a criminal with their trunks, trampling him to death, or impal-

E L E

ing him on their enormous tusks, according to the will of the inhuman commanders. But in these offices the Elephant is merely the servant of a cruel master, and not a voluntary tyrant; since no animal of the forest is naturally more benevolent and gentle: equally mindful of benefits, and sensible of neglect, it contracts a friendship for its benefactors, and obeys them even beyond the extent of its natural strength.

As a particular instance of the astonishing power, as well as sensibility, of the Elephant, we are informed that, on the launching of a very large vessel in India, a tame one was directed to force it into the water, when the task proved superior to the animal's strength, in spite of its utmost exertions. The keeper, however, affecting to despise the poor creature's best endeavours, cried out, 'Take away that lazy beast, and bring another better qualified for service!' when the Elephant instantly redoubling its efforts, fractured its skull, and died on the spot.

The following anecdotes, as they are derived from the best authorities, may perhaps serve to elucidate the peculiar qualities and dispositions of this very singular quadruped.

In the city of Delhi, an Elephant passing along the streets, put its trunk into a tailor's shop, where several people were at work. One of the men, either for the sake of amusement, or from motives of brutality, pricked the animal's trunk with his needle, and seemed to entertain himself exceedingly with this pitiful achievement. The Elephant, however, passed on without betraying any signs of immediate resentment; but, coming to a dirty puddle, filled its trunk with part of the contents, returned to the charge, and spurning the foul water all over the finery on which the tailors were employed, thus amply revenged the insult.

In Adinsceer, an Elephant which frequently passed through the public bazar, as it approached a certain herb-woman, had always received from her hands a mouthful of greens. Being one day seized with a periodical fit of madness, the animal instantly broke its fetters; and, running through the market, put the whole crowd of buyers and sellers to flight, among whom was his old benefactress, who had, in her haste, left her little child at the stall: but the animal, suddenly recollecting the spot where she was accustomed to sit, lifted up the infant gently with its trunk, and conveyed it to a place of security.

At the Cape of Good Hope, where it is customary to hunt Elephants for the sake of their teeth; and, where three horsemen well mounted, and armed with lances, usually attack one of these animals alternately, each relieving the other till the creature becomes their prey; three Dutchmen, who were brothers, and who had acquired large fortunes by this occupation, determined to retire to their native country, in order to enjoy the fruits of their labours; but wished, before they put their design in execution, to amuse themselves with a final chase. They accordingly set forwards; and, soon meeting with an object, began the attack in their usual manner: in the interim, one of their horses happening unfortunately to fall, thus dismounted his rider; which the enraged Elephant instantly perceiving, seized the unhappy huntsman, tossed him to a vast height in the air, and received the falling victim on one of its tusks. Then turning towards the other two brothers, with an aspect expressive of revenge and in-

E L E

sult, held out to them the impaled victim, writhing in the agonies of death.

Indeed, the teeth of the Elephant are productive of almost all the enmity which subsists between that animal and the human race; but whether they are shed annually, as in the deer kind, is a matter of uncertainty. However, the natives of Africa, from whom we receive the greatest part of our ivory, assure us that they generally find it in their forests; and that the teeth of an Elephant would by no means prove a sufficient recompence for their trouble and hazard in killing it.

The teeth of these animals are also very frequently met with in a fossil state; and, some years since, two great grinding teeth, and part of the tusk of an Elephant, were discovered in a lead mine, in Flintshire, at the depth of forty-two yards. The tusks of the mammoth, so often found fossil in Siberia, and which are converted to the purposes of ivory, are generally supposed to belong to the Elephant. However, the animal which produces them must have been formerly much larger in that country than it is at present, as those tusks frequently weigh four hundred pounds; while such of them as are imported from Africa seldom exceed two hundred and fifty.

The American Elephants are animals known only in a fossil state. Several enormous skeletons have lately been discovered, at the depth of five or six feet beneath the surface of the earth, on the banks of the Ohio, which are seven hundred miles from the sea-coast. Some of the tusks were near seven feet in length, one foot nine inches in circumference at their bases, and one foot near their extremities; the cavities at their bases being nineteen inches deep. Besides their size, there are other essential differences: the tusks of the true Elephant have sometimes a very slight lateral bend; as well as a larger twist, or spiral curve, towards their smaller ends. But the great and specific difference consists in the shape of the grinding-teeth; which, in those newly found, were fashioned like the grinders of a carnivorous animal, and furnished with a double row of high and conic processes, as if intended for masticating, and not for grinding their food; whereas those of the modern Elephant are flat, and ribbed transversely on their surfaces. A third variation is conspicuous in the thigh-bone, which is of a very disproportionable thickness to that of the Elephant, and has besides some other anatomical variations. These fossil bones have also been found in Peru and the Brazils; and, when cut and polished by ivory-workers, appeared in every respect to correspond. However, Dr. Hunter is of opinion, that they must have belonged to an animal larger even than the Elephant, and differing from it in being carnivorous: but as yet this formidable creature has eluded every search; and if such an animal really exists, it most probably inhabits some of the remote parts of the vast new continent as yet unexplored by Europeans.

It is said that the Elephant, on account of its longevity, represents the symbol of Eternity. On a medal of the Emperor Philip, Eternity is represented by that animal, on which a little Boy is mounted, holding arrows in his hand: and, in the kingdom of Bengal, in the East Indies, the white Elephant is worshipped as a divinity.

ELEPHANT, CATERPILLAR. An appellation given by some authors to a species of insect commonly known in Ireland by the name of

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the Connaught worm, and supposed to be fatal to such animals as accidentally eat it.

ELEPHANT, SEA. A name sometimes given to the hippopotamus.

ELEPHANT, TRUNK-FISH, or ELEPHANT'S NOSE. A species of the acus or needle-fish caught in the East Indies; so called from the resemblance of its snout to the trunk of the Elephant. The lower jaw of this very singular creature projects into a long and sharp-pointed spine; the body is round and beautifully variegated with spots; and a green line runs on each side from the head to the tail. The flesh of this creature tastes much like that of the smelt.

ELK. An animal of the cervus or stag kind; which has been so variously described by the ancients, and even by many of the moderns, that it is evident they either knew very little of its nature, or else different writers have described distinct animals under the same name. Pliny tells us, that the Elk resembles the horse, but that it is distinguished from it by the length of its neck and the largeness of its ears; Salinus says, that it is not unlike the mule; and both these authors add, that its upper lip is so very large, that it cannot feed without moving backwards. Pliny, from report, affirms the same of the machlis, a Scandinavian animal. Some have compared the Elk to the goat, and others to the stag; and some represent it as being of a dusky-yellowish colour: Cæsar, in his Commentaries, says that it is variegated with spots; and Pausanias informs us, that it resembles the stag kind, but is like the camel with respect to the length of its neck.

In the Linnæan system, the Elk is a species of cervus or deer, with horns having short beams spreading into large and broad palms; one side of which is plain, the exterior one being furnished with several sharp snags. It has no brow antlers; and there is a small excrescence under the throat.

This animal is found in Europe, Asia, and America; and, according to the best informed naturalists, is one and the same with the moole-deer. See **DEER, MOOSE.**

The term Elk is also frequently applied to the cygnus ferus, or wild swan. See **SWAN, WILD.**

ELOPS. An appellation common to the sea-serpent. The body is slender; the head is large; and the fin which covers the gills is double, having thirty spines, and being armed externally with five bones resembling teeth.

ELOPS is also the classical name of a fish much esteemed among the Greeks, and conjectured to be the same with the accipenser.

ELVERS. The name of a small species of eels caught in several rivers of England, particularly the Severn; being, in reality, young conger-eels. They enter the rivers while they are small; and, as they precede the shads, it is by some imagined that they supply them with food. About the month of April, when they quite swarm, they are taken in a kind of sieves constructed with hair-cloth, and affixed to long poles. The fisherman, who stands on the margin of the stream, throws in his net as far as he is able; and, instantly drawing it out again, finds multitudes of Elvers inclosed; and proceeding in this manner, during the continuance of the tide, frequently takes as many as will fill a bushel. They are esteemed very delicate food.

EMBER GOOSE; the Colymbus Ember of Linnæus. A species of diver which inhabits the seas about the Orkneys, but in very severe winters migrates

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migrates to the southern parts of Great Britain. It spends so much of its time in the water, that the more credulous are of opinion it never quits that element; and that it hatches its young in a hole formed by nature for that purpose under its wing.

The Ember Goose is superior in size to the common one; the head is dusky; the back, the coverts of the wings, and the tail, are clouded with lighter and darker shades of the same hue; the primaries and the tail are black; the under side of the neck is spotted with dusky; the breast and belly are silvery; and the legs are black. The skin is so tough, that in some of the northern countries it is said to answer all the purposes of leather.

EMBERIZA. An appellation, with the addition of the epithets White and Yellow, used to express the bunting and the yellow-hammer. In the Linnæan system, it constitutes a distinct genus of passerines, including a great number of species.

EMBRYO WORMS. Of these insects, which are lodged in the bodies of viviparous two-winged flies, the arrangement is a matter of no small curiosity. If one of them be accurately dissected, the parts where the Embryo Worms are inclosed will plainly appear. This dissection, which consists in taking off the whole upper shell of the body from the lower, is easily performed with a pair of scissors; and that part which covers the belly may be turned back on the corselet, without disturbing the internal members by the operation; when the form and arrangement of those parts which contain the Embryo Worms in these will be found very different from the shape and order of those which encircle the eggs in common flies.

EMPIS. A name sometimes expressive of a large species of gnat found about rivers and ponds; and distinguished from all other kinds by a white circle surrounding the middle of its body.

EMU. An American bird, called by some authors the Ostrich of the New World. It is but very little known; and those naturalists who mention it seem rather desirous of proving its affinity to the ostrich, than of describing those peculiarities which distinguish it from all others of the feathered creation.

These birds are chiefly found in Guiana, on the banks of the Oroonoko, in the interior provinces of Brazil and Chili, and in the vast forests which border on the River Plata. Several other parts of America were once known to contain them; but as mankind have multiplied, those large and timorous creatures have either fallen victims to their power, or retired from their vicinity.

The Emu, though not so large as the ostrich, is the second bird to it in magnitude, being by far the largest in the new continent. The head generally measures six feet from the ground; the legs are three feet long; and the thighs are nearly as thick as those of a man. It has three toes, whereas the ostrich has but two; the neck is long; the head is small; and the bill is depressed like that of the ostrich; but, in all other respects, it bears a stronger resemblance to the cassowary than to any other fowl. The shape of the body is roundish; the wings are short, and entirely unsuitable for flight; and it has no tail. The back and rump are covered with long feathers, which fall backwards, and cover the anus; and these are grey on the back, and white on the belly. It moves with great velocity, and seems to derive assistance in its progress from a kind of tubercle behind shaped like a heel, by

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which it treads very securely. In its course it uses a very singular kind of action; namely, that of lifting up one wing, which it keeps elevated for a time, and afterwards the other. Whether this creature makes use of its wing as a sail in order to catch the wind, or as a rudder to direct its course, remains yet to be ascertained: however that may be, it runs with such amazing swiftness, as generally to leave the fleetest dogs far behind it; and one of them, on finding itself surrounded by the hunters, is said to have darted among the dogs with such astonishing fury, that to avoid its rage they instantly gave way, while the courageous animal escaped in safety to the mountains.

This bird being but very little known, travellers have given scope to their imaginations in describing some of its actions, which they are well aware cannot be easily contradicted. Nieremberg informs us, that it is very peculiar in its mode of incubation: 'The male,' says he, 'compels twenty or thirty of the females to lay their eggs in one nest; he then chases them away, and places himself on the eggs; however, he takes the singular precaution of laying two of the number aside, on which he does not sit. When the young ones come forth, these two eggs are added; which the male having foreseen, breaks one, and then another, on which multitudes of flies are seen to settle; and these supply the young brood with a sufficiency of provision till they are capable of assisting themselves.' On the other hand, Wafer asserts, that he has found great quantities of the eggs of this animal on the desert shores north of the River Plata, buried in the sand in order to be hatched by the heat of the climate. But of this, as well as the preceding account, we are somewhat doubtful; and it is highly probable that the last of these naturalists saw only the eggs of the crocodile, which are unquestionably hatched in that manner.

When the young are first excluded, they appear to be very familiar, as they follow the first person they meet. 'I have been attended myself,' says Wafer, 'by many of these young ostriches, which at first are extremely simple and harmless; but, as they grow older, they become more cunning and distrustful, and run so swiftly that a greyhound cannot overtake them.'

Their flesh is generally esteemed proper for food, especially when young; and, as they are naturally very tame, it would perhaps be no difficult matter to rear them in a domestic state; especially as their maintenance could not be expensive, if, as Narborough says, they live entirely on grass.

ENCHILIDES. A genus of animalcules containing the capillary cels found in peppermint, vinegar, and other fluids.

ENCHILUS. An appellation given by Aristotle, Appian, and all the Greek writers, to the eel.

ENCRASICOLUS, or the Anchovy. A small sea-fish of the harengiform kind, but destitute of the row of serrated scales on the belly. These creatures are caught in prodigious numbers in the Mediterranean and some other seas, and are well known as a pickle in most nations of Europe. See **ANCHOVY.**

ENCRAULOS. An Aristotelian appellation for the anchovy.

ENCURECK. A venomous insect found in Persia, and supposed by some naturalists to be a species of tarantula. It neither stings nor bites, but lets fall its poison like a drop of water, which

occasions an almost intolerable pain for a considerable time; and afterwards superinduces such a profound sleep, that nothing, it is said, can awake the patient but the crushing one of those creatures on the part affected: it is, however, asserted, that sheep feed on these insects without receiving the smallest injury.

EPERLAMUS. A name sometimes given to the smelt on account of its pearly colour.

EPERVIERS. The French appellation for that class of butterflies which constitutes the sixth in Reaumur's distribution. These insects are distinguished by their poisoning themselves on their wings after the manner of kites and other birds of prey, and never settling on those flowers from whence they derive their subsistence, but fluttering with a humming noise while they thrust their trunks into the cups of the flowers, and extract their juices.

EPHEMERA. A distinct genus of the order of neuroptera in the system of Linnæus, distinguished by two gibbous protuberances above the eyes, erect wings, and a bristly tail. This celebrated naturalist enumerates eleven species of this class, discriminated by their different colours, and the number of hairs in their tails, some having two, and others three.

The Ephemera, or Day-fly, as its name imports, though among the most minute of that kind of insects, may be considered as one of the most curious objects in natural history. All the various species are produced from eggs, in the form of worms; from whence they change to their aurelia state; and then adopt their last mutation, viz. into beautiful flies, of longer or shorter duration, according to their kinds.

The Ephemera, in its fly state, is a very elegant winged insect, strongly resembling the butterfly both in its size and shape; but its wings are not covered with that kind of painted dust with which those of butterflies in general are adorned and rendered opake. The Day-fly has four wings, the uppermost being considerably the largest; and, when the creature is at rest, it generally lays its wings over each other on its back. The body is long, and composed of six rings which are larger at their beginnings than near their extremities; and from thence a tail proceeds longer than all the rest of the fly, consisting sometimes of three threads of unequal lengths, and at others of two long and one short. Before this beautiful form is acquired, the insect must have undergone all the various transmutations of its kind: but its glory is exceedingly transient, for the hour of its greatest perfection is that of its death; and it seems scarcely introduced to pleasure when destined to resign its life.

The reptile that is to become a fly, and which is granted so long a term when compared to its latter duration, is an inhabitant of the water, and in many particulars bears a strong resemblance to fishes. It is furnished with gills, by means of which it respire at the bottom; and possesses also the tapering shape of aquatic animals. It has, besides, six scaly legs, which are affixed to their corselet; the head is triangular; the eyes, which are placed forwards, may be distinguished both by their largeness and colour; and the mouth is furnished with teeth.

As there are several species of Ephemera, their aurelia are consequently of different hues, some being yellow, some brown, and others cream-co-

loured. Some of them likewise excavate cells at the bottom of the water, from which they never stir, but feed on the mud which composes the walls of their habitations in contented captivity: others, on the contrary, range about, dive from the surface to the bottom, swim between two waters, quit that element entirely in order to feed on plants by the river side, and then return to their native abodes for protection and security.

But though the reptile exists two, and sometimes three years, throughout all that long duration it offers but little to excite curiosity: its most striking peculiarities command our attention during the short interval of its fly state, into which are crowded the most important transactions of its life. The peculiar sign by which we may discover that this reptile will shortly change to a fly, consists in a protuberance of the wings on the back; about that time the smooth and depressed form of the superior part of the body is changed into a more swollen and round figure, so that the wings in some measure become perceptible through the external covering.

As but a very few species of these insects are natives of England, the curiosity of the naturalist can only be sufficiently indulged by walking, about sunset, along the banks of the Rhine, the Seine, or some other continental rivers in temperate climates; where, for the space of about three days during the middle of summer, their numbers and assiduity are perfectly astonishing: the thickest descent of the flakes of snow in winter seems hardly to equal their numbers; the whole air appears as if animated by the new-born race; and the earth itself is almost entirely covered with their remains. The aureliæ, or reptile insects, as yet beneath the surface of the water, wait only the approach of the evening, in order to commence their transformation; the more industrious divest themselves of their exuviae about eight o'clock, and the most tardy are transformed before nine. Nothing, indeed, seems to be effected with more facility than this last metamorphosis; the aureliæ are no sooner raised above the surface of the water, than their old sheathing-skins burst; from the cavities of which flies issue, whose wings instantly unfolding, bear them into the air. Millions of aureliæ ascend in this manner to the top; and, instantly becoming flies, fill all the vicinity with their flutterings. But these sportings are speedily terminated; for the whole swarm, in the space of two or three hours, falling to the ground, covers the earth, after the manner of deep snow, for several hundred yards on each side of the river.

The males and females, during their very limited existence, are differently employed. The former, quite inactive, and apparently without desires, seem only born to die: unlike the males of other insects, they neither pursue the females, nor shew any aversion to them; and, after fluttering for an hour or two, drop down dead. But, with respect to the latter, the case is very different; for scarcely have they left the surface of the water, and dried their wings, when they hasten to drop their eggs back again; and these they deposit according to their different situations, sometimes on the water, and at others on the land.

But as this account may perhaps be unsatisfactory to the inquisitive naturalist, who will probably enquire by what means these eggs are fecundated, as no copulation whatever appears to take place between the sexes during their transitory excursions in air; we shall answer his reasonable enquiry by first

laying

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laying before him the opinion of the ingenious Swammerdam, who informs us, that they are impregnated, in the manner of fish-spawn, by the males, after being ejected by the females. But, besides that this doctrine is exploded even from the history of fishes, it is certain that the males have not time to perform this operation, as the eggs drop to the bottom the instant they fall into the water. Reaumur, who is of a contrary opinion, admits that they copulate; but says, that the act bears a proportion in shortness to the small duration of their lives; and consequently must be so quickly accomplished, as to be scarcely perceptible. This, however, is at best but sporting a theory; and it is probable, that as many insects are known to breed without any impregnation from the males, so the *Ephemera* may probably be of the number. But though this branch of natural history is still unauthenticated, certain it is that, of all insects, this appears to be the most prolific. As it flutters on the superficies of the water, two clusters may be observed to issue from the extremity of its body, each containing about three hundred and fifty eggs. Indeed, it would seem as if there was a necessity for such a supply, as, in their reptile state, these insects constitute the favourite aliment of every kind of fresh-water fish. In vain do these animalcules form retreats at the bottoms of rivers, from which they seldom remove; various kinds of fish constantly disturb their repose, and thin their numbers. For this reason fishermen diligently collect a sufficient quantity of these insects, as proving the most grateful bait; and thus turn the rapacity of the fish to their own destruction.

Though the short span of life prescribed to the generality of these little animals does not exceed two or three hours, there are some species which exist for several days; and one in particular, after quitting the water, has a second slough to cast: these are often traced in the fields and woods at a considerable distance from that element, though they are more frequently observed in its vicinity. They are also at times found adhering to walls and trees, frequently with their heads downward, without either changing their situations or possessing the smallest visible motion. In this condition they wait for the moment of their liberation from the last surrounding incumbrance; and, having at last attained to a state of perfection, speedily die.

For a particular description of some of the most curious *Ephemera*, see *DAY-FLY*.

EPOPS. A name given by some ancient writers to the bird called by modern ones *upupa*; in English, the hoopoe. See *HOPOE*.

EPTACTIS. An appellation sometimes given to a species of star-fish of the *astrophyte* kind, whose rays or branches, on their first projection from the body, are only seven in number, but which in time diverge into many more.

EQUUS. The classical name of the horse. See *HORSE*.

EQUUS MARINUS. An appellation given by some naturalists to an animal very different from the hippopotamus or river-horse, and more usually known under that of the morse.

ERANDGAAS. A fowl of the goose kind, noticed by some authors, and by them described as being somewhat smaller than the common wild goose. The head grey; the neck adorned with a red ring; the breast, wings, and neck, grey; and the feet red. Ray seems to question the reality of this account.

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ERICA: An appellation given by some naturalists to the common herring, the *chalcis* of Aristotle.

ERINACEUS. See *HEDGE-HOG*.

ERINOPTERUS. See *PRIVET-FLY*.

ERMINE; the *Mustela Erminea* of Linnæus. This animal, which is also called the Stoat, so greatly resembles the weasel in its size and conformation, that many naturalists, and Linnæus among their number, have given but one description of both.

The Ermine, however, differs from the weasel in being nine inches long; whereas the latter seldom exceeds six. The tail of the stoat, which is always tipped with black, is longer in proportion than the body, and better covered with hair; and the edges of the ears, and extremities of the toes, are of a yellowish white hue. But though the colours of the Ermine and the weasel are nearly alike, (being a lightish brown in summer and white in winter in the more northern parts of Europe) even then the weasel may be easily distinguished from the Ermine by the tip of the tail, which in the latter is always black.

The fur of the Ermine is well known to be one of the most valuable kinds hitherto discovered; but it is only in winter that it possesses its proper colour and consistence. During the summer season, the Ermine, as before observed, is brown. And, indeed, this change of colour in the hair of quadrupeds in some measure prevails in all: the horse, the cow, and the goat, evidently vary their hues in the beginning of summer, the old hair then falling off, and shorter supplying its place, but generally of a darker and more glossy hue.

What in this our temperate climate obtains in a small degree, prevails in a much greater in those regions where the winters are long and very severe, and the summers short, and yet intensely hot. During these last seasons, the animal divests itself of its warm coat of fur, which would prove very inconvenient, and continues for two or three months in a state somewhat resembling that of the ordinary quadrupeds of milder climates. At the approach of winter, however, with the increase of the cold, the coat of hair seems to thicken in proportion: from being coarse and short, it lengthens and grows finer; while multitudes of small hairs springing up between the longer ones, thicken the fur to an extraordinary degree, and communicate to it all that warmth and softness which is peculiar to hyperborean animals.

To present our readers with a philosophical account of the causes of this remarkable warmth in the furs of northern quadrupeds, would perhaps be attended with some degree of difficulty. It may indeed be said, that nature thus fits them for the climate; and, like an indulgent mother, when she exposes them to the rigours of an intemperate winter, supplies them with coverings proper for withstanding them. But though this may be true, it does not amount to a physical demonstration: however, it is observable with respect to quadrupeds, as well as the human species itself, that a thin meagre diet has a tendency to produce long hair; and that children who have been sparingly fed, as well as famished dogs and horses, are generally more hairy than others whose aliment has been dealt out to them more plentifully. This may perhaps be assigned as one cogent reason why animals inhabiting the northern climates are, during the brumal seasons, more hairy than those of milder ones; for

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at those periods the whole country is covered with deep snow, and the provisions which the creatures are then able to procure are both scanty and precarious. The progressive fineness of the fur may also arise from the intenseness of the cold, which contracting the pores of the skin, the hair of course assumes the shape and size of the apertures through which it grows, as wires are extended by being drawn through smaller orifices. But, leaving such arguments to the investigation of the curious, suffice it to remark, that all the animals of the arctic climates may be said to possess their winter and summer garments, except near the poles, where the cold is always so very severe, and food so extremely scarce, that one unvarying colour universally distinguishes the quadruped inhabitants.

As Ermines are chiefly valuable when clothed in their winter attire, we shall consider them in that point of view. Daubenton, we are told, procured one of them covered with it's white winter fur, which he put into a cage, that he might observe the process of moulting it's hair. He received it at the beginning of March: in a very short time it began to shed it's coat, and a mixture of brown was observed to prevail among the white hairs; so that, by the ninth of that month, the head was almost entirely of a reddish brown hue. This colour seemed at first gradually to extend along the neck, and down the back, in a stripe half an inch in breadth; the fore-part of the legs then assumed the same colour; and a part of the head, the thighs, and the tail, changed last of all: but at the end of the same month, no white remained, except on the throat and belly, which in this species always retain that hue. However, he did not enjoy the satisfaction of seeing the animal resume it's former whiteness, though he kept it upwards of two years; which circumstance undoubtedly originated from it's confinement, the quantity of it's food, and the superior clemency of a French to an arctic winter. During it's confinement, this animal always appeared wild and untractable, and even in a kind of violent agitation, except when asleep, in which state it often continued three parts of the day. The eyes of this very elegant little creature were sprightly; it's physiognomy was pleasant; it's motions were so swift, that the eye could not follow them; but it's smell was very rank and offensive. It's aliment consisted of eggs and flesh, but it usually suffered both to become corrupted before it touched them. As some animals of the Ermine kind are known to be very fond of honey, it was accordingly set before this creature; which, after being deprived of other food for three or four days, eat of that substance, but died very shortly afterwards: a convincing proof of it's being a distinct species from either the pole-cat or the martin, which feed on honey with avidity, though they greatly resemble the Ermine both in their shape and disposition.

The furs of Ermines in the north of Europe and in Siberia constitute a valuable article of commerce; in which countries those creatures are by far more numerous than in the temperate climates. In Siberia, they burrow in the fields, and are taken in traps baited with flesh. In Norway, they are either shot with blunt arrows, or caught in snares: each of these ambushes is composed of two flat stones, one of them being propped up by means of a piece of wood, to which is fastened a baited string; so that whenever the animal attempts to pull it away, the stone drops, and crushes it to death.

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The Ermine is sometimes found white in Great Britain, and is then called the white weasel. It's fur, however, is of very little value, possessing neither the thickness, closeness, nor whiteness, of those which are imported from Siberia. Indeed, the hair of this creature in every country changes in a course of time; for, as much of it's beautiful whiteness is imparted to it by certain arts practised by furriers, so it's natural colour again returns, and it's former brightness can never be restored.

ERNE. An appellation given by some naturalists to the cinereous eagle. See EAGLE, CINEREOUS.

ERYTHRINUS. A fish called by some authors rubellio and travolino; and, by the Venetians, alboro, or arboro. It is but a small species, somewhat resembles the gilthead in shape, and is entirely of a pale red colour. The tail is forked; the nose is sharp; and the eyes, which are large, have silvery irides, and sometimes a slight tinge of red intermixed with the white. The mouth is small; the fore-teeth are broad, the hinder ones being rather tubercles than teeth; and the coverings of the gills are scaly. It has only one dorsal fin, the anterior rays or nerves of which are prickly, the other being soft and smooth to the touch.

ERYTHROCYANEUS. An appellation given by some authors to the red and blue macaw, with a uniform tail, and the sides of the head naked and rough. See MACCAW.

ESCALLOPS. A family of bivalve shells; the essential character of which is a trigonal sinus, and an elastic cartilage for it's hinge in the very centre of the top of the shell. The subordinate characters of Escallops consist in their being eared, which indeed most authors have made their chief distinction; whereas there are other eared shells besides Escallops, viz. the spondyles and margaritiferae; and, vice versa, there may be Escallops without ears. Another inferior character is that of the tops running into a perfect straight line, and thence gradually widening to a round bottom.

The species in this family are very numerous; some of which are very curious and beautiful, namely, the ducal mantle; the compass, or sole; the duck's foot, or coral; and some others.

It is perhaps worthy of remark, that the colours of the under shells of Escallops are always fainter than those of the upper ones; and that the valves have sometimes a different tinge, as may be observed in the compass, or sole, which has one valve of a chestnut brown, and the other milk white.

The generality of authors rank these shells as a particular family, and call them peccens. Gualtieri makes different genera of those which have equal, and such as have unequal valves; the former he calls peccen, the latter concha peccinata; and the Escallops with unequal or single ears he ter a peccunculi. Linnæus makes them a genus of mollusks, and has accordingly arranged them under that appellation in his three hundred and thirteenth genus.

It has been asserted by some naturalists, that Escallops move with such amazing force, as sometimes to bound out of the catcher in which they are inclosed; and that their manner of leaping, or raising themselves up, consists in forcing their under valves against those substances on which they lie.

ESCH. A name given by Hildegard, and some others, to the fish called in England the grayling, or umber; and, by the generality of authors, the

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rallus. It is of the coregonous kind; and Artedi distinguishes it by the upper jaw being longest, and the back-fin containing twenty-three bones. In Germany it is called aisch; and, in Italy, remello.

ESOX. A genus of fishes of the class of abdominales in the Linnæan system; the characters of which are, that they are of the malacopterygious kind; that the branchiostege membrane contains from seven to twelve bones; that the body is oblong; and that the dorsal fin is small, and placed near the tail. Linnæus enumerates nine species of this genus, and Artedi only three.

EWE. The female of the sheep kind.

EXACTIS. An appellation given to a species of star-fish of the more branchiferous kind.

EXOCÆTUS. A genus of fishes of the order of abdominales in the Linnæan system; and, in the Artedian, of the malacopterygious or soft-finned kind. The characters are these: the branchiostege membrane contains ten bones, four of which are broad, and covered by the opercula of the gills; the pectoral fins are very long; the dorsal fin is placed near the tail; and the scales are large. There are only two species of this genus.

EXORMISTOS. An ancient appellation for a species of the petromyzon, the lampetra fluviatilis, called in England the lampern. Artedi distinguishes this fish by the name of the petromyzon with only one series of small teeth in the verge of the mouth, and a few diminutive ones below. See **MUSTELA**, **LAMPETRA**, and **PETROMYZON**.

EXOS. A name given by Gesner and Rondeletius to the fish commonly called the huso, or ichthyocollis piscis. It is properly a species of the accipenser; and is distinguished from the common

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sturgeon by being destitute of tubercles. See **ACCIPENSER**.

EXQUIMA. A kind of monkey, very common on the coast of Guinea. The hair on the back, which is of a reddish brown colour, appears as if singed, and is interspersed with white spots; the belly and chin are entirely white, and from the latter depends a beautiful snow-white beard about the length of two fingers. When this animal is irritated, it draws back it's lips; and, exposing it's teeth, shuts it's jaws very nimbly, and chatters remarkably loud. It is a very active creature, and subsists on fruits and roots.

Another species of this monkey is found in Guinea, of the same size as the former, and of a blackish brown colour on the greatest part of the body; but the belly is a blueish grey, and the tail is somewhat tawny. The mouth and nose are blue; the cheeks are adorned with a great number of yellow hairs clustered together like those which compose the beard of the goat; and the legs and feet are wholly black. This is also a very sprightly, sportive animal.

There is likewise a third variety of the Exquima, but much smaller than either of the former. The colour of this creature is an admixture of brown, yellow, and grey: the head is small, and it has neither tail nor beard.

EYE-SUCKER. A small marine insect, sometimes found adhering by it's snout to the eye of the sprat, from which circumstance it receives it's name. It is about three inches in length, of which the head occupies one quarter. The body, which is somewhat thicker than a hog's bristle, is of a lively green colour.

EYE, GOLDEN. See **DUCK, GOLDEN-EYED**.

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FABER. The classical appellation of the dorée.

FACETAMUS. A kind of lizard known at Rome and Naples by the name of the tarantula.

FAITIERE. A species of shell-fish so termed by the French on account of it's shape, which resembles the roof of a house; and, by classical authors, called concha imbricata. This shell, which is of the bucardium or ox-heart kind, has seven longitudinal ribs and a great number of transverse laminæ; so that it bears a striking similitude to the rafters and cross-beams of a house.

FALCINELLUS. See **FASCINELLUS**.

FALCON. A distinct genus of birds of the hawk kind in the Linnæan system; the characters of which are, that the bill is strong and hooked; that the base is covered with a cere or naked skin; and that the head is feathered, and the tongue bifid.

Linnæus classes no less than thirty-two species under this genus; among which are the eagle, the buzzard, the hawk, and the lanner.

Falconry was once the favourite amusement of our ancestors; and persons of rank seldom made

their appearance without their hawks perched on their hands; which, in ancient paintings, are the criterions of nobility. Harold, one of the ancient kings of England, and who, before his elevation to the throne, went on a most important embassy into Normandy, is drawn in an old bass-relief as embarking for that country with a bird on his fist and a dog under his arm; and, in an ancient picture of Henry VI. one of his courtiers is represented in the same attitude. In those early times, it was thought sufficient for the sons of noblemen to wind the horn, and carry their hawks properly; the accomplishments of literature being left to those who had their fortunes to acquire. Indeed, this diversion was in such high esteem among the nobility all over Europe, that Frederic, Emperor of Germany, did not think it beneath his dignity to write a treatise on that subject. The expences attendant on this sport were very considerable. In the time of the old Welsh princes, the king's falconer was the fourth officer in the state; but, notwithstanding his honourable appointment, he was interdicted swallowing more than three draughts of beer daily from his horn, lest being thereby intoxicated, he should neglect

neglect his duty. In the reign of James I. Sir Thomas Monson paid one thousand pounds for a cast of hawks; and therefore it cannot appear at all surprising that the laws were formerly so extremely rigorous in preserving an amusement which was carried to such an extravagant pitch. By a statute of Edward III. the stealing of a hawk was deemed felony; and the carrying away it's eggs, even from a person's own ground, was punishable with imprisonment for a year and a day, together with a mulct at the king's pleasure. In the reign of Elizabeth, the term of confinement was reduced to three months; but the offender was condemned to remain in prison till he could procure security for his good behaviour during the space of seven years. The art of shooting, indeed, was but little practised in those early times; and the hawk was then greatly valued, not only for affording much diversion, but for furnishing the tables of the opulent with delicacies which could not be obtained by any other means.

The generous breed of falcons, or hawks, which have been introduced into the service of man, are distinguished from all the others by the peculiar length of their wings, which reach almost as far as their tails: in these, the first quill of the wing is almost as long as the second, and terminates in a point which begins to diminish about half an inch from it's extremity. Thus the noble breed are discriminated from the baser race of kites, sparrow-hawks, and buzzards, whose tails are longer than their wings, and in which the first feather of each wing is rounded at the extremity. In the generous race likewise, the second feather of the wing is the longest; but, among kites, sparrow-hawks, and buzzards, the fourth is the most extensive.

The magnanimous kinds of Falcons are endowed with many natural powers, of which the ignoble are wholly destitute. From the superior length of their wings, they are swifter in the pursuit of their game; from a confidence in their velocity, they are emboldened to attack it; and, from an innate generosity, they contract an attachment to their feeders, and are consequently more docile and tractable than birds of a baser sort.

In order to train up a Falcon to hunt for it's master, as well as to present him with such game as is killed by it, no small degree of skill and assiduity are requisite. Numberless treatises have been written on this subject, which are now, as well as the sport itself, almost consigned to oblivion: indeed, to modern readers, works on such a topic are perfectly unintelligible; for falconers used a language peculiar to themselves, in which they conversed and wrote with a professional pride. However, we shall briefly exhibit the most approved modes by which the Falcon may be brought to answer it's original destination.

The manager of this bird begins by clapping straps on it's legs, called jesses; and to them are affixed rings bearing the owner's name, by means of which the Falcon may be recovered, if in danger of being lost. To these rings are added little bells, which serve to notify the situation of the animal though invisible to the eye. It is always carried on the fist, and obliged to refrain from sleep; and, when it proves stubborn, or attempts to bite, it's head is immediately plunged into water. Thus, by hunger, watching, and fatigue, the Falcon is constrained to suffer it's head and eyes to be covered with a hood or cowl; which troublesome bu-

siness is frequently continued for three days and nights without much intermission: however, at the expiration of that time, the necessities of the animal, together with it's privation of light, generally divest it of every idea of liberty, and bring down it's natural ferocity. It's master concludes that it is sufficiently tamed, if it permits it's head to be covered without resistance; and if, when uncovered, it seizes the meat laid before it with a degree of patient satisfaction. A repetition of these lessons by degrees ensures success. The wants of the Falcon being the chief principle of it's dependence, various methods are taken to increase it's hunger, particularly that of giving it little balls of flannel, which it swallows with avidity. Having thus excited the appetite, care is taken to satisfy it; and thus gratitude attaches the bird to the person who acts only as it's tormentor.

When the first instructions have proved successful, and the Falcon discovers tokens of docility, it is conveyed to some confined place; it's head is uncovered; and by soothing it with food at different times, it is gradually taught to jump on it's master's hand, and to continue there; and, after being confirmed in this habit, it is then judged proper to acquaint the creature with the lure, which is only a stuffed figure of some bird the Falcon is destined to pursue, perhaps a heron, a pigeon, or a quail; and on this lure care is always taken to give the creature it's food. Indeed, it is necessary that the bird should not only be familiarized to this, but also fond of it, and delicate in it's food when shewn it. As soon as the Falcon has alighted on this figure, and tasted the first morsel, some falconers take it away; but by such practices there is some danger of intimidating the bird: therefore, whenever the creature attempts to fly, the surest method is to seize it, and suffer the animal to feed at large; and this serves as a recompence for it's docility. The use of this lure consists in flattering the Falcon back when it has mounted into the air, though this method does not at all times prove effectual; and, indeed, it is always proper to assist it by the voice and signs of it's master. When these lessons have been pretty often repeated, it is then necessary to study the character of the bird; to address it frequently, if it seems inattentive to the voice; to flint it in it's food when it does not come readily to the lure; to keep it awake if it is not sufficiently familiar; and to cover it frequently with the hood if it is not fully reconciled to the deprivation of light. The freedom and docility of the Falcon being thus perfected in the field of instruction, it is then conveyed to some extensive plain, but still limited in it's motions by a string about twenty yards in length; and being covered as before, the falconer calls it at the distance of several paces, at the same time shewing it the lure; on which it flies, and is permitted to take a large morsel of the food affixed to it: on the day following the lure is held up to the bird at a greater distance; and afterwards at the utmost length of the string. The live game constitutes the next object of allurements, but either in a disabled or tame state, that the creature may conquer it with facility. The Falcon having seized it several times while confined by the string, is then left entirely at liberty to pursue wild game: at that the Falcon flies with eagerness; and, having either seized or killed it, is brought back again by the voice and the lure.

This bird may be taught to fly at any time
whatever,

whatever; but falconers have generally confined their attention to such only as either yield them profit in the capture, or pleasure in the pursuit. The hare, the partridge, and the quail, generally compensate the trouble of taking them. But the chase of the heron, the kite, or the woodlark, affords the most agreeable diversion: when these birds perceive themselves in danger from the approach of the Falcon, they immediately mount upward, instead of flying, like most others, directly forward; and, while their eager pursuer endeavours to rise above them, both parties gradually diminish to the view of the gazing spectators below till they are totally lost in the clouds: but, descending shortly after, they are seen struggling together, the one exerting every effort of rapacious attack, and the other making a desperate defence. A period, however, is speedily put to the unequal conflict; the Falcon always comes off victorious; and the other animals, being either killed or disabled, become an easy prey.

As birds in general fly straight forward, the sportsman soon loses sight of the chase; and, besides, is in danger of losing his Falcon: they are therefore not much pursued when amusement is the object. However, to a person who regards only the address of the chase, the pursuit of the lark by a couple of merlins is one of the most delightful spectacles which this exercise is capable of affording; and consists in beholding one of the merlins using every exertion in its power in order to get the ascendancy of the lark; while the other, hovering in a lower situation, waits the most favourable opportunity for seconding the efforts of its companion: thus, while the one swoops to strike its prey, the other seizes it whenever it descends.

Such are the natural and acquired habits of these birds; which, of all others, possess the greatest strength and courage in proportion to their size. While the more ignoble Falcon tribe approach their prey sideways, these, in their wild state, dart perpendicularly on their game, and either devour it on the spot, or carry it off if not too ponderous to retard their flight. They are also at times seen to descend, in a straight line, from an amazing height, and to dart on their prey with astonishing celerity.

The species of Falcons, properly so called, are the following.

FALCON, GYR. This elegant species exceeds all others with respect to size, approaching nearly to that of the osprey. The irides are dusky; the bill is yellow, and much hooked; the throat is pure white; and the whole plumage is of the same colour, except that it is marked with dusky lines, spots, or bars. On the head, breast, and belly, there are narrow dusky lines thinly feathered, and pointing downward; the feathers of the back and wings are marked with black cordiform spots, and the middle ones of the tail with a few bars; the thighs are clothed with long fine white feathers; and the legs are yellow, and feathered a little below the knees.

This bird is sometimes found entirely white. It was in high estimation when falconry was more fashionable than at present, and always used for the noblest game, such as cranes and herons. The Gyr Falcon inhabits the northern parts of Scotland, and is at times seen in the vicinity of Aberdeen.

FALCON, PEREGRINE. The size of this bird is equal to that of the minor buzzard. The bill is

short, strong, much hooked, armed near the end of the upper mandible with a very sharp process, blue at the base, and black at the point. The feathers on the forehead are whitish; the crown of the head is black intermixed with blue; and the hind part of the neck is black. The back, scapulars, and covers of the wings, are elegantly barred with deep black and blue; the quill-feathers are dusky, marked with elliptical transverse white spots; the tail is barred with several dusky and blue strokes; the throat is white; and the fore-parts of the neck and upper part of the breast are white tinged with yellow. The remainder of the breast, the belly, and thighs, are white inclining to grey, and crossed with dusky strokes pointed in the middle. The feathers of the tail are of equal lengths, and beautifully barred with blue and black; the legs are short and yellow; and the toes are very long.

This species seems to vary. Loranzi, in describing the male Peregrine Falcon, has made all his colours darker, and the head and upper part of the body almost black; and Pennant says he saw one that was shot in Hampshire, the whole under-side of the body of which was a deep dirty yellow, but the black bars were the same as in that above described. It is probable, however, that this variation arises from the difference of sex, or from age.

Peregrine Falcons breed among the rocks of Llandidno, in Caernarvonshire; which have long been famous for producing a generous race, as appears by a letter extant in Gloddaeth library, from the Lord Treasurer Burleigh to an ancestor of Sir Roger Mostyn, in which his lordship thanks him for a present of a fine cast of hawks taken on these rocks, and which still belong to the family. In the north of Scotland they are very common, and sometimes trained to falconry by the few gentlemen there who still delight in this amusement. Their flight is inconceivably rapid; for one of them, which had been trained by a gentleman in Angusshire, having escaped from him with two heavy bells appended to each foot, was killed, in less than two days afterwards, near Mostyn in Flintshire.

FALCON, SACRE. This species, which, except the Gyr Falcon, is the largest, has a remarkably big head, a short blue beak, and a body longer in proportion than the rest of the tribe. The head is grey, the crown being flattish; the eyes are large and black; the nostrils are small; and the back and breast are spotted with brown. The insides of the thighs are white spotted with black; and the feet and legs are generally blue, though sometimes whitish spotted with yellow.

FALCON, MOUNTAIN. This bird is about the size of the goshawk, but the body is thicker. The head is roundish, except on the top, where it is a little depressed, and covered with cinereous feathers mixed with black; the beak, which is strong, short, and crooked, has a great number of fine slender feathers resembling hairs rising from its base; the throat and part of the breast are spotted with ash-colour; the body is generally of a brown dappled hue, resembling rusty iron, but sometimes varying to blackish with small lines of white; the thighs are clothed with long black feathers, and the feet are of a dusky brown colour. The Mountain Falcon is very rapacious and intractable.

FALCON, GREY. The Grey Falcon is about the size of the raven. The bill is of a blueish colour, short, strong, and much hooked; the head is small, and depressed on the top; the fore-part being a deep brown, and the hind white. The sides of the head

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head and throat are cream-coloured; the belly is white, with oblong black spots; and the hind part of the neck and the back are a deep grey. The wings are very long; and, when closed, reach beyond the tail: the first quill-feathers are black, with white tips, and the others are a blueish grey, having their inner webs irregularly spotted with white. The tail is long and cuniform; the two middle feathers of which are the longest, and plain, the rest being spotted; and the legs are long, naked, and yellow.

FALCON, GENTLE. This species is of an elegant conformation, and somewhat larger than the goshawk. The cere and legs are yellow; the irides are a dull white; the pupil is large, and of a full black hue; and the head is of a light rust-colour with oblong black spots. The whole under-side, from the chin to the tail, is white tinged with yellow, each feather being marked with cordiform dusky spots pointing downwards. The back is brown; the quill-feathers, which are dusky, are barred on their exterior webs with black, and on the lower parts of their interior ones with white. The coverts of the wings and the scapulars are brown, edged with rust-colour; and the wings reach only to one-half of the length of the tail. The tail itself is marked with four or five black bars, and the same number of cinereous ones, the first being edged both above and beneath with a line of dull white.

Great caution should be observed in describing hawks, no other birds being so liable to change their colours during the two or three first years of their lives; and a want of attention to this circumstance has occasioned their numbers to be greatly exaggerated: but the proper marks to be attended to, for the purpose of forming the characters of the species, are those on the quill-feathers and the tail, which never vary. Writers on falconry have given various names to the same kinds in different periods of their lives, which naturalists have adopted, and described as distinct tribes; and even the accurate Ray has been so far misled as to copy them. Though the Falcon, the Gentle Falcon, and the Haggard, are made distinct species, they in reality form but one; and for that reason we shall not trouble our readers with unnecessary repetitions, which would only tend to perplex them.

FALCON, WHITE. The whole body of this bird is pure white, except a few faint yellow spots, which cannot be distinguished but by a very nice inspection; the wings, indeed, are perfectly white, without the least mixture. The colour sufficiently distinguishes this species from all other birds of the same kind.

FALCON, BARBARY. This sprightly and majestic bird has a large black beak, and open yellow nostrils. The eyes are of a dark hazel colour, encircled with yellow rings; the top of the head is of a pale ash-colour, beautifully spotted with black; the feathers on the back, shoulders, and part of the wings, are nearly of the same hue, and equally ornamented with black spots; the breast, belly, and thighs, are yellowish, inclining to white, the upper part of the breast being a little shaded with blue. The wings are very long; and, when closed, reach almost to the end of the tail, which is blueish, with six or seven dusky-coloured streaks running across it. Part of the thighs, and the lower part of the belly, are marked with curious oblong red spots resembling ermine; the legs and feet are yellow; and the claws are black.

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FALCON, RED INDIAN, OF ALDROVANDUS. This naturalist possessed two of these birds, which he conjectured to be male and female. The top of the head of the female was depressed; the beak was cinereous, and the skin which covered it's base was yellow. From the exterior corner of the eye proceeded an oblong reddish spot; and the breast and under-part of the body were reddish interspersed with a few cinereous spots. The male differed from the female only in being somewhat less, and in his colours being generally deeper.

FALCON, INDIAN CRESTED. This species is of the size of the goshawk. The head is flat, black, and crested; and the crest, which is double, hangs down on the back part of the head. The neck is red; the breast and belly are black and white, being marked with alternate transverse lines of those colours; the irides are yellow; the beak is a very deep blue, or rather black, especially near the point; and the base is covered with a yellow membrane. The legs are feathered down to the very feet, which are yellow, and armed with extremely black claws; the edges of the lesser feathers of the wings are white; the tail is alternately striped with white and ash-coloured streaks; and the other parts are blackish.

A bird of this species was imported into England in the reign of King Charles II. and was first described by Ray.

FALCONE. An appellation given by some authors to the milvus or flying-fish.

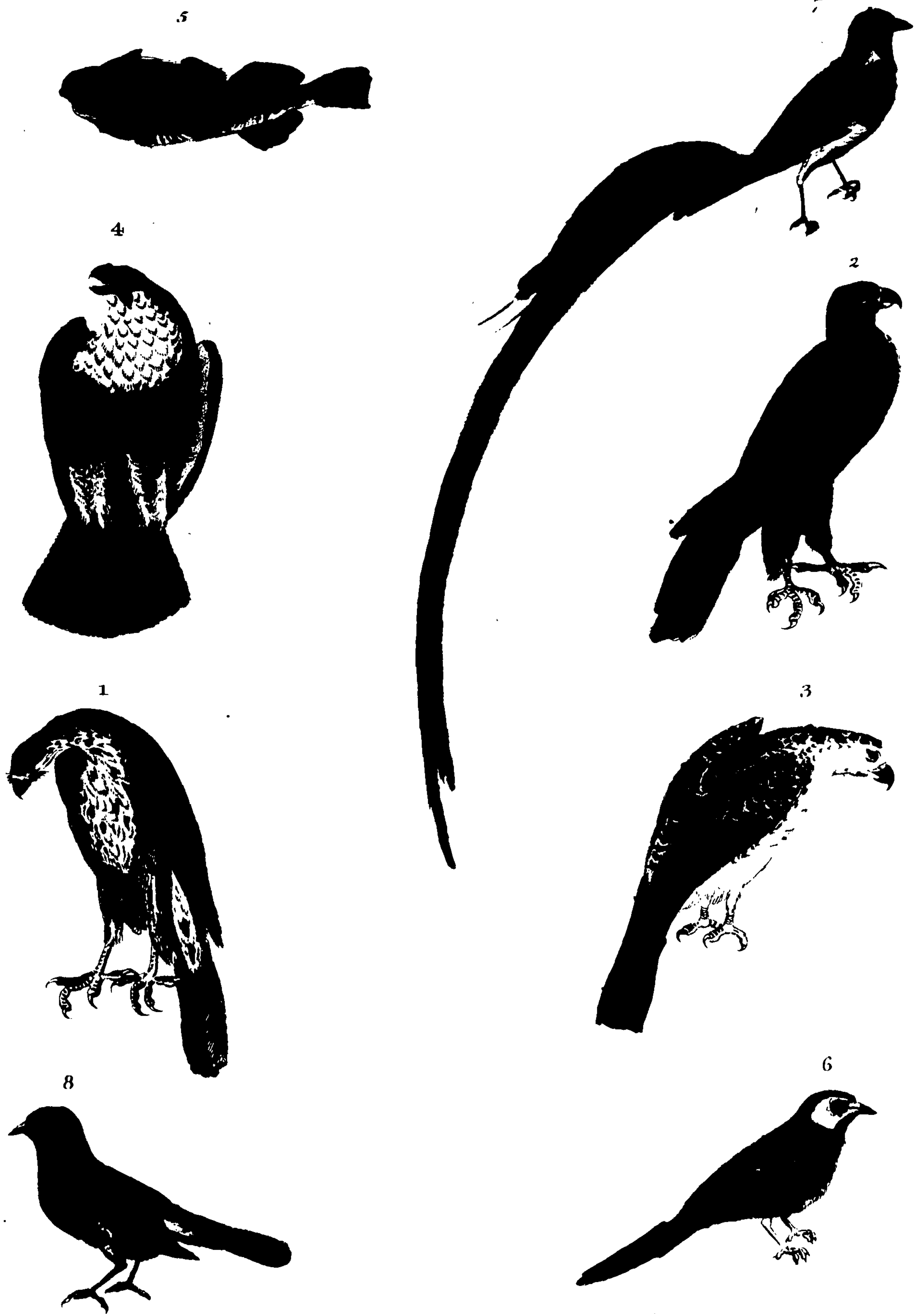
FALLOW-FINCH, or FALLOW-SMICH. A name sometimes given to the oenanthe, more commonly called the wheat-ear, and by some authors octiflora.

FAREN. The Swedish appellation for a fish peculiar to that country. It is of the genus of cyprini, and distinguished by Artedi under the name of the yellow-eyed cyprinus with twenty-seven bones in the pinna ani.

FARIO. A term used to express the salmon when about half-grown, after it has passed that state in which it is called the salar, and before it has arrived at it's full growth.

FASCINELLUS. A bird so called by Gesner and Aldrovandus, bearing a strong resemblance to the heron kind. The head, neck, breast, back, belly, thighs, and rump, are of a tawny colour; in the middle of the back there is a darkish green spot; and the wings and tail are nearly of the same colour. The bill is blackish, very long, and hooked at the extremity; and the feet are of the same hue.

FATHER LASHER; the Cottus Scorpius of Linnæus. A fish of the cottus kind, called by Artedi the smooth cottus without scales; having several spines on the head, and the upper jaw being a little longer than the under. The head, which is very large, has a most formidable appearance, being armed with vast spines, by which the creature combats every enemy that attacks it, inflating it's cheeks and gill-covers to a prodigious size. The nose, and the space contiguous to the eyes, are furnished with short sharp spines; and the covers of the gills are terminated by some very long, strong, and sharp-pointed ones. The mouth, which is large, contains two rows of minute teeth; the roof being furnished with a triangular spot of small ones. The back is much elevated; the belly is prominent; the lateral line is rough; but the rest of the body is very smooth, tapering towards the tail. The first dorsal fin consists of eight spiny rays,



1. GENTLE FALCON. 2. GYR-FALCON. 3. SPOTTED FALCON. 4. PEREGRINE FALCON.
 5. FATHER LASHER. 6. BRAZILIAN RED AND BLUE FINCH. 7. LONG-TAILED FINCH.
 8. PAINTED FINCH.

rays, and the second of eleven soft ones; the pectoral fins, which are large, are made up of sixteen rays, the ventral of three, and the anal of eight; and the tail, which is rounded at the extremity, is composed of twelve bifurcated rays. The colour of the body is a dusky brown, marbled with white, and sometimes stained with red; the fins and tail are transparent; and the belly is a silvery white.

This fish, which seldom exceeds eight or nine inches in length, is ordinarily found on the rocky coasts of this island, lurking under stones, where it sometimes seizes a bait. It is very common in the Newfoundland seas, where it is called scalping; and also on the coast of Greenland, in which country it constitutes the principal food of the natives: and, when made into soup, it is said to be both agreeable and wholesome.

FAUSSE-CHENILLE. A large class of worms produced from the eggs of several species of four-winged flies, and so denominated by Reaumur and other naturalists. These worms, with respect to their general shape, have so much the appearance of caterpillars, that they have led many writers on insects into an opinion of their being really so. Their bodies, like those of caterpillars, are long, and composed of several joints or rings; their skins are also of the same consistence; and in many species these creatures are variegated with the most beautiful colours, disposed after the same manner as those of smooth caterpillars. Both these insects have a great number of legs, of two kinds; some membranaceous, others scaly. The worm and the caterpillar have each six scaly legs; but the membranaceous ones are different in number, and alone sufficient to constitute a distinction between them. The caterpillars never have more than ten of these; which, with the scaly ones, make sixteen, the greatest number of legs belonging to their kind: but the worms have always twelve legs at least of the former kind; which, together with the six scaly ones, make the whole number eighteen; and many species have that number of membranaceous legs alone. The membranaceous legs of the worms differ also from those of the genuine caterpillars, in wanting the hooks at their extremities, which those of the latter have. Hence the legs alone afford a sufficient basis of distinction between the caterpillar and the Fausse-Chenille, or caterpillar-worm. But the shape of their heads affords a still more obvious distinction; and by this they may always be known at first sight: the heads of the various species of caterpillars are of several very different shapes; some are short, others long; some are more or less depressed; and some terminate in a sharp point; while others are distinguished by a sort of interstice or division in the back part. Such are the perceptible variations in the heads of the several kinds of genuine caterpillars: but those of all the Fausse-Chenilles are of one shape, round and very convex, so that they appear as part of a small sphere. The mouths of these and the genuine caterpillars are wholly similar; and the stigmata are placed in the same manner. However, the eyes of the two kinds again distinguish them; the Fausse-Chenille having only two, which are very large and prominent, and placed on each side of the head; whereas the caterpillar has five eyes on each side of its head, placed in a circular direction, and too small to be seen with the naked eye.

The Fausse-Chenilles likewise differ from the

common caterpillars in their manner of remaining on the leaves of plants: the caterpillar is always extended at its full length when feeding or at rest; but the former, though it stretches its body to its full length when feeding always rolls it up into a spiral figure when at rest, making several circular convolutions, of which the head is at the end of the outermost, and the tail at the very centre of the inner one. When seizing on their food, these insects give themselves various singular contortions; and it is a very whimsical sight to observe a considerable number of those kinds which live in societies, attacking different portions of the same leaf at once, and each giving its body a different direction at the same time.

This creature, when it finds the season of its transformation into the nymph state approaching, begins to form a case in which it may undergo this change, and remain during the destined time, without being exposed to external injuries. For this purpose, it spins a web of silk, shaped like a small egg, which has nothing remarkable externally; but, when dissected, it is found to be composed of two different substances: at least, of two substances of very different mechanism, though the materials of both are the same. The exterior case is reticulated, and composed of very strong threads woven into a loose open net-work; but the interior one is formed of extremely fine threads, woven into such a close stuff that no loom can equal its fabric. The outer strong and coarse web is evidently intended for the better defending and protecting the insect from danger; and those two distinct cases barely adhering to one another, when the exterior one is separated, the interior still remains complete. The strength of the external shell is extremely requisite, as well as the close texture of the internal one, to defend the inclosed animal in the nymph state from several devouring insects. The ants, in particular, are very fond of these nymphs, and will hunt out the cases wherever they are to be found.

The flies produced from these insects are of that kind which are destitute of trunks, but are furnished with strong teeth on each side of their heads, which closing in the middle of their mouths, are able to cut any substances to pieces which the animals have occasion to penetrate. The first use of these teeth is to eat holes through the double webs, in which these creatures find themselves inclosed at their birth. All the flies of this kind have a general resemblance to each other, and may be traced to the same family, though very different in colour and other obvious characters. They appear a dull inactive race, having very little motion; their wings are always crossed over their bodies, and form a sort of raised coverings; they contain several prominences and cavities; and appear as if they had been imperfectly expanded at the time of their emerging from the nymph state.

All the females of these flies are oviparous; and as their eggs must of necessity be lodged in cavities or niches made in the stalks or leaves of growing plants, nature has provided each of these creatures with two instruments destined solely for the purpose, and which are real saws made in the neatest manner with extremely minute teeth. But notwithstanding there are many different species of flies which have this sort of instruments, and several of them are very frequent on one of the most common of all garden shrubs, namely, the rose tree, no author had observed these wonderful and elegant instruments till the time of Vallinieri, who has de-

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scribed and figured the weapons of a rose-tree fly, produced from a false caterpillar of that shrub, with two rows of teeth, one on each side, in the manner of the saw belonging to the *serra piscis* or saw-fish.

FAUX BOURDON. An appellation given by Reaumur and others to the bees usually called drones in England.

FAUX PUCERON. A genus of insects so called by Reaumur, from their strong resemblance to the real pucerons. The two principal kinds of these are found on the backs of the leaves of fig-trees, and in little hollow balls at the summits of the branches of the box, formed of the upper leaves vitiated by the scars of these insects.

FAWN. An appellation given to a buck or doe of the first year. See **DEER**.

FEDOA. A name given by Gesner, and some other naturalists, to the godwit, more commonly called *ægocephalus*.

FELIS, in the Linnæan system of zoology, forms a large genus of quadrupeds of the order of *feræ*; the characters of which are these: the fore-teeth are small, obtuse, and equal; they have three grinders; the tongue is furnished with prickles all pointing backwards; and the feet are formed for climbing with retractile claws. To this genus belong the lion, tiger, leopard, lynx, ounce, catamountain, and domestic cat.

FELIS VOLANS. An animal described by Scaliger, and supposed to be what we call the flying squirrel. This creature has a loose membrane on each side, connecting the fore with the hinder legs; which it can distend at pleasure, and by means of which it is enabled to take such long leaps, as to appear to fly.

FELIS ZIBETHICUS. An appellation given by naturalists to the civet-cat, a species of the *viverra* in the Linnæan system. See **CIVET-CAT**.

FEMALE. An animal which generates within itself; so called in opposition to the male, which engenders in another. The female, in quadrupeds, and in birds, is usually smaller and weaker than the male; but, in predaceous birds, the female is the largest, strongest, and most courageous.

FERÆ. In the Linnæan system of zoology, one of the orders of animals and class of mammalia: the characters of which are, that they have sharp teeth; the upper fore-teeth are six in number; and the canine, or dog-teeth, are longer than the rest. Of this order are, the lion, the tiger, the bear, the cat, the weasel, the ferret, the didelphis or philander, the otter, the sea-calf, the dog, the badger, the hedgehog, the mole, the bat, and various others.

FERN-OWL. A provincial name for the caprimulgus or goat-sucker, called also the churn-owl. It is a very beautiful bird; and bears a stronger similitude to the cuckow than the owl kind.

FERRA. A fish called also the Gwiniad, or Guinead.

FERRET. An animal of the *mustela* or weasel kind; called also *mustela sylvestris*, *furo*, and *surunculus*.

This animal is a kind of domestic in Europe; but in its wild state it is a native of Africa, from whence it was originally imported into Spain, in order to free that country from the multitudes of rabbits with which it was over-run; and from thence the rest of Europe were supplied with it. It grows to the length of a foot; and has a very sharp nose,

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red and fiery eyes, and round ears. The colour of the body is a pale yellow, but it is also found of all the colours of the weasel kind, white, black, brown, and party-coloured. It also resembles the weasel in the slenderness of its body, and the shortness of its legs. It is a lively, active animal; and the natural enemy of rabbits, sucking the blood of its prey, but seldom mangling it. The Ferret, though a native of the torrid zone, will breed in our climate, and brings forth from five to nine at a time; but it is apt to degenerate, and lose its savage nature, till an intercourse can be procured between it and the pole-cat; which in some measure restores the breed to its natural ferocity. The Ferret has the same disagreeable smell as the pole-cat; and, being unable to endure the rigours of our climate in a wild state, it is generally domesticated, and kept for the purposes of the warren. It is trained up to enter the rabbit-holes, and to drive the inhabitants into nets prepared for them at their mouths. To effect this, the Ferret is muzzled; else, instead of driving out the animals, it would only kill them, and suck their blood: but, by this contrivance, the rabbits escape from the Ferret, and precipitately run to the mouths of their holes, where they are entangled in the nets. Sometimes, indeed, it happens that the Ferret finds means to disengage itself from its muzzle, when it is usually lost to its master; for, finding all it wants supplied in the warren, it continues there till the severity of the weather proves fatal to its existence. In order to allure the Ferret from its retreat, the owners often burn straw and other substances at the mouth of the hole, or stamp with their feet over it: but this does not always succeed; for as there are often several avenues to each hole, the Ferret is neither affected by the noise nor the smoke, but continues secure at the bottom, sleeping the greatest part of its time, and waking only to satisfy the calls of hunger.

The female of this species is sensibly less than the male, whom she seeks with great ardour; and, it is said, that she often dies merely from not being admitted to coition. These creatures are usually kept in boxes like rabbit-hutches; and are furnished with wool, of which they make themselves warm beds, which serve to defend them from the rigours of the climate. They are generally fed with bread and milk; they breed twice a year; and some of them devour their young the instant they are produced.

The Ferret is an useful, but disagreeable and offensive animal: its scent is foetid; its nature is voracious; it is tame without attachment; and, such is its appetite for blood, that it has been known to attack and kill children in their very cradles. It is easily irritated; and though at all times its smell is offensive, it is then peculiarly so; and its bite is not to be cured without great difficulty.

FERRET, INDIAN. A name applied by some to express the animal known in America by the appellation of quirpele and quil. See **ICHNEUMON**.

FIARSING. A Swedish and Danish appellation for the *draco marinus*. It is a species of the *trachinus*, according to Artedi; and is distinguished from the rest by having its lower jaw longer than the upper, and being destitute of beards.

FIATOLA. A name given by the Italian fishermen to the *stromateus*.

FIBER, or CASTOR FIBER, of Linnæus. An animal with strong cutting teeth; short ears, and

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hid in the fur; a blunt nose; hair of a deep chestnut brown; a broad tail almost oval, horizontally compressed and covered with scales; with the fore-feet small, and the hind-feet large. The length of this animal, from nose to tail, is about three feet; and the tail is eleven inches long, and three broad. See BEAVER.

FIBULA. A class of echinodermata, having the mouth in the middle of the base, and the aperture of the anus on one edge. They are chiefly found fossil.

FICEDULA CANNABINA. A name sometimes given to the cannevarola, or lesser reed-sparrow.

FICUS. A peculiar species of sea-shell of the genus of the dolium, having a remarkably depressed clavicle, it's distinguishing characteristic.

FIELD-DUCK, FRENCH. A species of bustard, so called from it's flying near the ground, as the duck does near the water. It is as large as the pheasant; but the head is like that of the quail, and the bill like that of the hen. These birds are caught like partridges; they fly very swiftly at a small elevation from the ground, perhaps two or three hundred paces, and then alight: they likewise run with amazing fleetness. The head, back, and wings, are of a brownish yellow colour, variegated with black and white; the breast, belly, and thighs, are whitish; and the legs and feet are cinereous. There are three toes on each foot, as is usual in the bustard kind. The flesh is highly esteemed.

FIELD-FARE. This bird is of the thrush kind, and is called the *turdus pilaris* by ornithologists. It is larger than the common thrush; it's length is ten inches, and it's breadth seventeen. The head is ash-coloured, inclining to olive, and spotted with black; the back and greater coverts of the wings are of a fine deep chestnut; the rump is cinereous; and the tail is black, the lower parts of the two middlemost feathers, and the upper sides of the exterior feathers, excepted, the first being ash-coloured, and the latter white. The legs are black; and the talons are very sharp. This bird generally weighs about four ounces.

The Field-Fare is a bird of passage, spending the summer in the northern parts of Europe. It builds it's nest in the loftiest trees, feeds on all kinds of berries, and is particularly fond of those of the juniper. It visits Great Britain about Michaelmas, and leaves it the latter end of February or the beginning of March.

This bird, and the red-wing, are the *turdi* of the Romans, which they fattened with a composition of figs and bread. Varro informs us that they were birds of passage, arriving in Italy in autumn, and quitting it in the spring.

These birds, whose flesh is esteemed such a delicacy, are easily caught with bird-lime in the subsequent manner. The fowler must endeavour to kill two or three with a gun; then he must tie one or two of them to the higher branches of some bushy tree, in such a manner that they may seem alive and perched there; after this, he must prepare two or three hundred twigs, covering them well with the water bird-lime, made warm for that purpose; then taking a birchen bough, and on it placing all the twigs, he must tie the whole fast to the tree where the dead game is suspended. Having observed to fix this line in a place where Field-Fares usually resort to feed in the morning, two or three dozen may sometimes be secured at once.

FIELD-FARE, PYED. This curious species was

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accidentally shot among a flock of common Field-Fares; and is but little known. The bill is yellow; the head and neck are white, spotted with lead-colour and black; and there is a yellow spot or space on the fore-part of the neck, round which are several little dark spots or shades. The back is a darkish brown; the rump is more pale; and the middle of the breast is a brownish yellow, interspersed with a variety of transverse black lines. The quill-feathers of the wings are of a dusky colour; but the exterior edges, as well as the edges of the scapular feathers, are white. The belly and thighs are white, spotted with black; the tail and claws are also black; and the feet are of a dusky brown hue.

FIG INSECT. An English appellation for the *faux-puceron* of Reaumur. These insects, when at their full growth, are each about the bigness of the head of a large pin; but among them are usually found several which are smaller, down to such as are scarcely perceptible by the naked eye. They are found in vast numbers on the backs or undersides of the leaves of the fig-tree; but they are never seen in clusters like the pucerons.

The body and breast of this insect are green; and the cases of the wings are white and hairy. It has two antennæ or horns, which it can exert at pleasure; but they are usually lodged under the furrows of the wings, and consequently not perceptible till the animal is turned on it's back: the head also is incurvated; and the eyes seem directed to look only at objects placed beneath them. It has six legs; and a small trunk issuing from the extremity of the head, of a lively green colour, and terminated by a sharp point: this trunk has a fine brown hair-like filament, which the insect protrudes at pleasure, and which seems to be an organ destined to convey into the body the juices extravasated by the wounds and the suction of the trunk.

This creature usually remains perfectly motionless on the leaf on which it is found; but has this peculiarity in it's position, that it's head always rests on one of the ribs of the leaf, and it's body on the plain part, by which means the anterior part of the head is raised above the surface of the plain part of the leaf; and the creature can move it's trunk about at pleasure, and fix it into different parts of the leaf, while it's body continues inactive.

These insects frequently change their skins during their growth; and, in the months of May and June, they all become winged. They afford a peculiar species of four-winged fly, remarkable for hopping; but as it's posterior legs are not much longer than the rest, it's leaps are but short. The body of this fly is green; the wings are bordered with yellow; and the legs are white. The trunk is of the same nature with that in it's original state, and with this it continues to suck the juices of the leaves of the fig-tree in the same manner as it did before it's transformation.

The manner of propagation in these insects is not certainly known. The pucerons, to which they approach nearer in figure than to any other animals, on dissection, shew young ones inclosed: but these, in whatever state they are examined, never exhibit any such appearance, not so much as eggs being found in them. It should therefore seem that their eggs are too minute for our inspection; but that they are oviparous, not viviparous animals.

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FIG-SHELL. See **DOLIUM**.

FIGWORT-WORM. An insect which feeds on the leaves of the scrophularia, or fig-wort, usually esteemed a caterpillar; but which, in fact, is one of those insects called *fausse-chenilles* by the French.

FILANDERS. A genus of minute worms, which are found in the throat, the heart, the liver, and the lungs of the hawk; and by which that bird is greatly incommoded.

These Filanders, or vermiculi, are of four kinds, according to the part of the animal they infest. The first are in the gorge or throat; the second are in the belly; the third are in the reins; and the fourth are called needles, on account of their fineness. As these worms are very restless, the bird frequently endeavours to vomit them up; and, in the action of opening it's bill, they may easily be perceived. From the throat, they ascend to the larynx and brain; and, finally, spread over the whole body. Bad food generally breeds these insects; and they are most effectually eradicated by making the bird swallow a clove of garlick.

FILE SHELL-FISH. A name sometimes given to the pholas. See **PHOLAS**.

FIN-FISH, the *balæna physalis* of Linnæus. A species of whale distinguished from the common fish of that name by a fin on the back, placed very low, and near the tail.

The length of this fish is equal to that of the common whale, but the body is much more slender. It is furnished with whale-bone in the upper jaw; but, being short and knotty, it is not much esteemed. The blubber also on the body of this kind is very inconsiderable; which circumstances, added to it's extreme fierceness and agility, render the capture very dangerous and insignificant. However, the natives of Greenland hold it in much esteem, as it affords a great quantity of flesh very agreeable to their palates. The lips are brown, and resemble a twisted rope; and the spout-hole appears as if it were split in the top of it's head, through which it blows water with great violence to an amazing height.

Some authors conjecture this to have been the physeter, or blowing-whale, of Oppian, Ælian, and Pliny: but, since those writers have left no particular description of it, we cannot pretend to judge on what grounds this opinion is formed, as all whales possess the faculty of blowing or spouting out water.

FINCH. A genus of birds with acute pointed, conical, hard bills; of which there are numerous species.

FINCH, BULL. See **BULL-FINCH**.

FINCH, GOLD. See **GOLD-FINCH**.

FINCH, GREEN. See **GREEN-FINCH**.

FINCH, CHAFF. See **CHAFF-FINCH**.

FINCH, GREY. This species is a native of the East Indies; and in size, shape, and manners, bears a strong resemblance to the common linnet. The bill is of a dark ash-colour; and the eyes are black. Round the base of the lower chap of the bill is a little whiteness, which extends itself under the eyes. The breast, belly, and the whole under side, are of a very light blueish ash-colour; but the top of the head, and the upper side of the neck and back, are of a dark cinereous. The rump, and coverts of the upper side of the tail, are of a very light ash; and the upper sides of the wings are dusky, except that the edges of the feathers are of a light ash. The greater quills are dusky at their tips, and white at their bottoms, which forms a

white spot on each wing; and the legs, feet, and claws, are of a dark flesh-colour.

FINCH, BLUE-BELLIED. This bird is four inches and a half in length; the bill is shaped like that of the goldfinch, and of a dirty flesh-colour; the top of the head, the upper side of the neck, and the back and wings, are of an ash-coloured brown, inclining to purple; the sides of the head quite round the eyes, the throat, breast, belly, rump, tail, and covert-feathers above and below, are all of a fine light blue or sky-colour; and the legs, feet, and claws, are brown. This bird is a native of Angola, in Africa; and is called, by the Portuguese settlers, *azulinha*.

FINCH, PURPLE, OF CATESBY. This beautiful bird has a white belly; and the rest of the body is of a deep violet-colour, except the tail, which is brown about an inch from it's extremity. The wings are somewhat deeper than the rest of the body; and the feet are grey.

FINCH, BAHAMA, OF CATESBY. This variety has a black head, breast, and back; a white streak above and below each eye; and a yellow spot under the bill. The breast and belly are orange-coloured; the upper part of the neck and rump are of a dark red; the wings and tail are brown mixed with white; and the feet are of a lead-colour.

FINCH, PAINTED, OF EDWARDS. The bill of this bird is short, thick at the base, terminating in a point, and of a dusky colour; the eyes are hazel-coloured; the head and the hinder part of the neck are of a most beautiful blue; and the throat and breast are red, till the red gradually dissolves into an orange colour on the belly. The back is of a light yellow green; the rump or covert-feathers of the tail are red; the wings and tail are of a blueish green above, and ash-coloured beneath; and the legs and feet are flesh-coloured.

The hen of this beautiful species is entirely of a parrot green colour, except the under side, which has a considerable tinge of yellow.

FINCH, COLLARED. This bird has a pretty strong black bill; and the head is also black, except a space round the eyes and the base of the bill, which is white; the throat is also white; a line of the same colour passes from the throat all round the neck, forming a kind of collar; and on the lower part of the neck before is a black bar, which more than half encompasses the neck. The back and tail are of a dark ash-coloured brown; the covert-feathers of the latter are somewhat lighter; the wing-feathers have black centres, and their borders are of a bright reddish brown; the greater quills are black; the breast, belly, and thighs, are white, shaded with a faint orange-colour; and the legs and feet are dusky.

FINCH, BRAZILIAN, RED AND BLUE. The bill of this species is a very fine red; the feathers round the upper part of the bill and the sides of the head are of a fine purple or blossom-colour; the eyes are dark, but the surrounding skin is of a fine scarlet colour; and between the bill and the eyes there is a dusky line. The throat, immediately beneath the bill, is black; the top of the head, the neck, back, covert-feathers of the wings, breast, and belly down to the thighs, are of a dark dusky red; the quills of the wings are dusky; and the lower part of the back, the belly, and the covert-feathers both above and below the tail, are of a very fine blue. The tail is pretty long, and black; the middle feather is the longest, and the side-feathers gradually become shorter. The legs and feet are

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of a darkish flesh-colour. This curious bird is a native of Brazil.

FINCH, RED-BREASTED, LONG-TAILED. This singular species has a short thick bill of a blueish colour; the whole head, and the throat as low as the breast, are blackish; the back, wings, and tail, are also black; but the edges of the greater wing-feathers appear a little whitish. The tail-feathers, which are wholly black, are about thirteen inches and a half long, and three-quarters of an inch wide near the rump, decreasing gradually to less than a quarter of an inch at their tips. The breast is of a full deep orange-colour; the hinder part of the neck is somewhat lighter; the belly and thighs are white; the lower belly, and the covert-feathers under the tail, are dusky; and the legs, feet, and claws, are of a flesh-colour.

But the most extraordinary circumstance attending this bird is, that it changes its colour, and has no long feathers in its tail for upwards of six months in the year. About the beginning of November, it sheds its tail, and molts its feathers; when its colours totally alter; the head becomes black and white streaked; the breast, back, and covert-feathers of the wings, turn to a reddish brown spotted with dusky; the greater quills and tail-feathers, to a blackish brown; and the whole belly, thighs, and coverts, to white. In this state it continues during the winter; but at the beginning of summer it molts again, when the long feathers of the tail begin to shoot out; and towards the latter end of June, or the beginning of July at farthest, it resumes its gayest dress.

This account, however improbable it may appear, is given by the ingenious Edwards; who informs us, that he carefully observed all the above changes in a live specimen at London.

FINGER-SHELL. An appellation given to a species of marine shell brought from the East Indies, and so called from its resemblance to the human finger. There are several species.

FINGER-SHELL, RED. This variety is about three inches long, and of the thickness of a man's finger. The surface is smooth, except towards one end, where there are a few furrows. It is open at both extremities; and the colour is a fine variegated red, from the strongest damask rose-colour to the faintest carnation.

FINGER-SHELL, CROOKED. This species, which is variegated with brown and blue, is about six inches long, three-quarters of an inch broad, and incurved after the manner of a bow. The surface is smooth and glossy; but the extremities of many broken plates are perceptible on it, and it is completely white internally.

FINGER-SHELL, BROWN AND WHITE. This shell is slender and straight, about three inches long, and near a third of an inch in diameter. It is open at both ends; and the surface, though very pearly, is somewhat irregular. The general colour is an olive brown, variegated in some places with white, and the interior surface is entirely white.

FINGER-SHELL, VIOLET-COLOURED. This species is four inches long, nearly half an inch in diameter, and quite open at both ends. It is very thin and brittle; the surface is irregular; and the colour is a fine blueish purple, or violet.

FINGERY. Another name for the fish called the brainin.

FINNIKIN. A particular species of pigeon, called by Moore *columba in pyrum flectens*. Its shape and size resemble those of the common pigeon. The crown of the head is mottled; and on

FIR

its hinder part rises a crown, which running down the neck, bears some similitude to a horse's mane. The colour of these birds is either black or a pied blue; and they receive their name from the very singular manner in which the male strives to recommend himself to the notice of the female.

FIRE-FLAIRE. A fish of the ray kind, called also *pastinacha marina*, which seems to be the dread of even the boldest and most experienced fishermen. Nature has armed this animal with a barbed weapon proceeding from the tail, about five inches in length; concerning the tremendous effects of which, many astonishing fables have been handed down to us by Pliny, Ælian, and Appian. These naturalists ascribe to it a kind of venom which affects even the inanimate creation; trees touched by it instantly lose their verdure; and rocks themselves are represented as unable to resist this potent poison. The enchantress Circe is said to have armed her son with a spear headed with the spine of this fish, as the most irresistible weapon she could supply. Indeed, it is unquestionable, that darts and spears, in very early ages, were headed with this bone instead of iron. The Americans head their arrows with the bones of fishes to this very day; and, from their hardness and sharpness, they are no contemptible weapons. But that the spine of the Fire-Flaire is possessed of the deleterious qualities ascribed to it, we have every reason to doubt; though some men of high reputation in the literary world, and the whole tribe of fishermen, contend for its venomous effects. In fact, it is capable of inflicting a very terrible wound, attended with dangerous symptoms; but it certainly cannot be possessed of any poison, as the spine has no sheath to preserve the supposed venom on its surface, and the animal is destitute of glands, which would be necessary to separate the noxious fluid. Besides this, all those animals which are furnished with envenomed stings or fangs, seem to have them strongly connected with their preservation and existence; and should they be amputated, or even injured, the creatures themselves would speedily languish and die. But the case is far otherwise with respect to the spine of the Fire-Flaire, which is fixed to the tail like a quill, and annually shed in the same manner: it may, indeed, be necessary for the creature's defence, but by no means for its existence.

Wounds inflicted by the tails of animals carry something terrible in the idea; and hence fear may have added poison to the pain, and conjured up imaginary dangers. The negroes universally believe that the sting of this creature is poisonous, but they never die of the wound; for, on opening the fish, and applying it to the part affected, it produces a speedy cure.

FIRE-FLIES. A genus of Flies which exhibit a luminous appearance in the night-time. Of these various species are found in different quarters of the globe.

FIRE-FLIES, EAST INDIAN. These Flies are each about an inch broad, and as much in length. The head, which is brown, has two horns or feelers; and the neck is red. They have four wings; the uppermost of which are brown and hard, and the under soft: the shining substance is contained in a black bag situated on their backs, which is hid with their wings, except when in motion. During the rainy season, prodigious numbers of them swarm among the trees, on the blossoms of which they principally feed.

FIRE FLIES, WEST INDIAN. According to

F I S

Pere du Terre, these insects resemble living stars; of which such immense numbers appear during the night, that the air seems full of them. They have not any luminous appearance in the day-time, and therefore are little noticed by those who are ignorant of their qualities. They have something of the appearance of dirty beetles; and delight to frequent places where rotten wood is found, till about sun-set, when they fly abroad, and appear like so many lighted tapers carried round the woods by invisible hands. They pursue the light of a candle, or any other luminous object, with so much ardour, that they often perish in the flame.

The same gentleman gravely informs us, that the poor Popish clergy, when in want of candles or oil, catch one of these flies, by the light of which they read their matins with as much facility as with a lamp. When alive, and in full vigour, a flame seems to proceed from all parts of their bodies; but, when they become sick, it grows weak; and, after death, it is quite extinguished.

FIRE-FLIES OF MARTINICO. These creatures, which are somewhat smaller than common flies, yield a sort of sparkling golden light extremely agreeable. This light resides in a sort of white substance, of which they are full; and, when inclined, they are capable of either concealing or disclosing it.

FIRE-FLIES OF GUIANA. These flies are of two kinds. The largest is upwards of an inch in length; and has a very large head, connected with the body by a joint of a particular structure, with which it sometimes makes a loud noise. It is furnished with two feelers, or horns; two wings; and six legs. Under its belly lies a circular patch, which in the dark shines like a candle; and on each side of the head, near the eyes, is a prominent, globular, luminous body, somewhat larger than a mustard-seed. Each of these bodies resembles a rising star, emitting a bright powerful light; for two or three of these insects being put into a glass, afford sufficient light to read by. Even when the flies are dead, their bodies will still afford considerable light, though less vivid than before; and, if bruised or rubbed over the hands and face, they will exhibit a luminous appearance like phosphorus. These Flies, which are of a reddish brown colour, live in rotten trees in the day-time, and never venture abroad till the approach of night.

The other species is about half the size of the former; and their light proceeding from under their wings, it is only visible when they are elevated. The air is entirely filled with these insects in the night-time; but, like the rest of the kind, they are seldom visible during the day.

FISANELLE. A Venetian name for the species of water-fowl of the colymbus kind called by authors the colymbus major or great diver. It generally weighs about a pound: the feathers are downy, soft, and thick-set; the head and neck are brown; the back is blackish; the sides and belly are brownish; the breast is a silvery white; the wing-feathers are black and white; the toes are all connected by narrow membranes, but not webbed; and it is destitute of a tail.

FISCHERLIN. An appellation given by many of the northern nations to a small species of the larus or gull; called by Ray larus piscator; by Linnaeus, larus minuta; and, in England, the lesser sea-swallow. It is somewhat less than the common black-bird. The bill is yellow, tipped with black; the forehead and cheeks are white;

F I S

from the eyes to the bill runs a black line; the wings are long and grey; the feet are short and yellow; the breast and belly are white, and of an exquisite gloss; the crown of the head is black; and the back is grey.

These birds are very common on some parts of the British coasts during the summer season; but being extremely delicate in their natures, they are unable to endure the inclemency of our winters, and therefore retire to warmer climates.

FISGURN. A German fish of the shape of the lamprey. See **MISGURN.**

FISH, BLACK, OF ALEPPO. Dr. Ruffel, who describes this fish in his History of Aleppo, says that it resembles the silurus Rondeletii in shape; and, like it, has no scales. The head and back are black; the lateral line extends quite from the head to the tail; and, below it, the colour generally changes to a dark purple. The under part of the head is also of the same colour. The head is flat; and the body is round, except near the tail, where it becomes somewhat depressed. The mouth is not so large in proportion as that of the silurus; but, in its structure, it entirely agrees with the description of that fish. A small cirrus rises on each side from the edge of the nostril; two others of greater dimensions proceed from the angles of the mouth; and there are also four more on the lower lip. The eyes are situated near the corner of the mouth; and there are four branchiæ on each side, with a double row of six points. Near the branchiæ there are two fins, composed of seven radii; to the anterior part of which a pretty strong prickly bone is united. Above the anus are two small fins; a long one extends from under the anus to the tail, and another from the neck along the back; neither of which join with the tail.

This fish is caught in the River Orontes, and in the stagnant waters in its vicinity; and, from November to March, the markets of Aleppo are plentifully supplied with it. The flesh is as red as beef, rank-tasted, and deemed unwholesome; but, for want of better fare, it is much used.

FISHER. See **SABLE.**

FISHIES. In the Linnæan system, the fourth class of animals, including four orders; namely, apodes, jugulares, thoracica, and abdominales; which comprehend forty-seven genera, and four hundred species. However, the new Artedean system divides Fishes into five distinct orders; the malacopterygii, or soft-finned Fish; the acanthopterygii, or prickly-finned Fish; the branchiostegi, or Fishes without bones in the membranes over the gills; the chondropterygii, or Fishes with cartilaginous rays in the fins; and the plagiuri, or Fishes whose tails are placed horizontally.

The ocean being the great receptacle for Fishes, some have imagined that all the varieties are naturally of that salt element, and that they have only accidentally migrated into fresh water. A few still swim up rivers, in order to deposit their spawn; but the great body of Fishes keep at sea, and are incapable of existing in fresh water. In that extensive and inexorable abode, millions reside, whose manners, and whose very form, are wholly unknown. The curiosity of mankind, indeed, has drawn some from their depths, and his wants many more: with the figures of these at least he is acquainted; but, with regard to their pursuits, habits, times of gestation, and manner of parturition, these are all hid in the turbulent element which protects them.

F I S

The number of Fishes with whose names and figures we are in some measure acquainted, somewhat exceeds four hundred. Thus, to appearance indeed, the history of this class of nature is tolerably copious; but when we come to a more minute enquiry, it will be found, that of the greatest part of these we know but few qualities. Most Fishes present the same external form, sharp at either end, and swelling in the middle; which figure enables them with greater celerity and ease to traverse the fluid they are destined to inhabit. That peculiar shape which nature has given to most Fishes, human art has endeavoured to imitate in such vessels as are designed to sail with the greatest swiftness; but the progress of such machines is insignificant when compared to the rapidity of these animals. Any of the larger kind of Fishes overtake a ship in full sail with great ease, play round it without effort, and outstrip it at pleasure. All parts of their bodies seem adapted to accelerate their motion; their fins, their tails, and the undulation of their back-bones, assist progression; and it is to that flexibility of body which art can never give, that Fishes owe their superior velocity.

The fins are the chief instruments of motion in these animals; and those in some of them are more numerous than in others. A Fish, completely equipped for sailing, is furnished with two pairs, and three single fins, two above and one below. Thus qualified, it moves with the utmost rapidity, and undertakes voyages of a thousand leagues in a season. Those Fishes, however, that have the greatest number of fins, are not always the swiftest: the shark is esteemed one of the most active swimmers, yet it wants the ventral, or belly-fins; and the haddock, which it always outstrips, is completely fitted for motion.

Besides assisting the Fish in it's progression, the fins are necessary in rising or sinking, in turning, or even leaping out of the water. The pectoral fins, like oars, serve to push the creature forward: these are placed at some distance behind the opening of the gills; and are generally large and strong, answering the same purposes to a Fish in the water, that wings do to a bird in the air. By the continued motion of these fins, the Flying-Fish sometimes rises out of the water, and flies above an hundred yards, till, wearied with it's exertions, it drops again into it's native element. The pectoral fins serve also to balance the head of the Fish, when too large for the body, and to keep it from falling prone to the bottom; as is the case with large-headed Fish, when the pectoral fins are removed. The ventral fins are placed under the belly, towards the lower part of the body; and, whatever may be the situation of the Fish, these are always seen flat on the water, and rather to raise or depress the animal than to forward it's progressive motion. The dorsal fin is situated along the ridge of the back, and not only keeps the Fish in equilibrium, but also assists it's velocity. Many Fishes, indeed, are destitute of this appendage; but it is very large in all flat Fish, the pectoral fins of which are proportionably smaller. The anal fin occupies that part of the creature which lies between the anus and the tail, and this serves to keep the Fish in it's upright or vertical situation. But the tail, which in some Fishes is horizontal, and in others perpendicular, seems to be the grand instrument of motion; the fins being all subservient to it, and only giving direction to it's powerful im-

F I S

petus, by which the Fish seems to dart forwards with so great velocity.

If any Fish is put into a large vessel filled with water, these positions will be easily illustrated. The animal, in a state of repose, spreads all it's fins, and seems to rest on it's pectoral and ventral fins near the bottom. If the Fish folds up either of it's pectoral fins, (a faculty which it possesses) it immediately inclines to the same side; when it is desirous of a retrograde motion, striking with the pectoral fins in a contrary direction effectually produces it; and when it desires to turn, a blow from the tail sends it about; but if the tail strikes both ways, then the motion is progressive. In pursuance of these observations, if the dorsal and ventral fins be cut off, the Fish reels to the right and left, and endeavours to supply it's loss by keeping the rest of it's fins in unceasing action. If the right pectoral fin be amputated, the animal inclines to that side; if the ventral fin on the same side be removed, then it loses it's equilibrium entirely; but when the tail is cut off, the Fish loses all motion, and yields itself to the impulse of the water.

Hence it appears, that each of those instruments has a peculiar use assigned it; but, at the same time, that they all conspire to assist each other's motions. It is certain, however, that the number, the size, and the situation of the fins, seem rather to correspond with the animal's figure, than entirely to answer the purposes of promoting it's speed. If the head of the Fish is large and heavy, the pectoral fins are also large, and placed forwards, to prevent it's oversetting; but if the head is small, sharp-pointed, and not too heavy for the tail, the pectoral fins are likewise small, and the Fish is totally destitute of the ventral.

As terraqueous animals are generally furnished with coverings to keep off the injuries of the weather, so the inhabitants of the water are covered with a slimy glutinous matter, which, like a sheath, defends their bodies from the immediate contact of the surrounding fluid, and assists them in their easy progress through the water. Beneath this, in many kinds, is found a strong covering of scales, which, like a coat of mail, proves a most powerful defence; and under that, before we come to the muscular parts of the body, an oily substance is lodged, which supplies the requisite warmth and vigour.

Thus protected, and fitted for motion in it's native element, the Fish seems as well furnished with the means of happiness as quadrupeds or birds; but if we more accurately inspect it's faculties, we shall find it much their inferior. The sense of touching, which birds and beasts in some degree enjoy, can be but very imperfectly felt by the Fish, wrapped up in it's own coat of mail. The sense of smelling, indeed, so exquisite among beasts, and a little known among birds, is imparted to Fishes but in a very limited degree. It is true, that all Fishes have one or more nostrils; and even those which have not the apertures perceptible without, have notwithstanding the proper olfactory nerves within. But as air is the only known medium for the distribution of odours, it cannot be supposed that these animals, residing in water, can possess any power of being affected by them. If they have any perception of smells, it must be in the same manner in which the human species distinguish by their tastes; and it is probable that the olfactory membrane in Fishes supplies the place of a discriminating

F I S

a discriminating palate: by this they judge of substances that, first tincturing the waters with their vapours, are thus conveyed to the nostrils of the Fish, and probably produce some kind of sensation.

As to tasting, it seems very defective among Fishes; the palate of most of them is hard and bony, and consequently incapable of the powers of relishing different substances. This sense among quadrupeds, who possess it in a moderate degree, arises from the soft pliancy of the organ, and the delicacy of the skin which covers the instruments of tasting; and in them it may be considered as a more perfect and delicate kind of feeling: but, in the bony palates of Fishes, all powers of distinguishing being wanting, they frequently swallow the fisherman's plummet with as much avidity as his bait.

The sense of hearing in Fishes is still more imperfect, even if it exists at all. Certain it is, that anatomists have not been able to discover, except in the whale kind, the smallest traces of any organs of sound about the heads of Fishes. Indeed, in the centre of the brains of some of these animals are a few little bones; but their number and situation seem entirely accidental. Klein, however, supposes them to constitute the organs of hearing; but if we consider their perfect dissimilitude to those bones which serve for hearing in other animals, we shall be little inclined to adopt his opinion. The greatest number of Fishes are entirely destitute of those bones; some have them in small numbers, and others in abundance; yet neither testify any excellence or defect in hearing. To what purpose, indeed, should this sense be given to animals which are incapable of making themselves heard? they have no voice to communicate with each other; and, consequently, auditory organs would be superfluous. Mr. Gowan, who kept some gold Fishes in a vase, informs us that, whatever noise he made, he could not disturb them. He shouted as loud as possible, putting a piece of paper between his mouth and the water, to prevent the vibrations from affecting the surface, and the Fishes seemed still insensible; but when the paper was removed, and the sound had it's full play on the water, the animals seemed instantly to feel the change, and shrunk to the bottom. From this, and many other experiments, it is pretty obvious, that Fishes are as deaf as they are mute; and that when they appear to be alarmed at any noise, it is only from the vibrations of sound affecting the water.

Fishes are in a tolerable degree possessed of the sense of seeing; and yet, if we compare it with that of other animals, even this appears obscure. The eyes of most Fishes are covered with the same transparent skin that overspreads the rest of the head; which nature seems to have given them as a defence in the water, they being totally destitute of eye-lids. The crystalline humour, which in quadrupeds is flat, in Fishes is perfectly round, or sometimes ovated: hence it is evident, that these animals are extremely short-sighted; and that, even in the water, they are incapable of perceiving objects at a any considerable distance; which might be easily ascertained, by comparing the refraction of bodies in the water with that formed by a spherical lens.

From this short survey of the senses of Fishes, it appears sufficiently obvious, that this class of animals are far behind quadrupeds in their sensations, and, consequently, in their enjoyments. Nature

F I S

seems to have fitted them with appetites and powers of an inferior kind; and formed them for a sort of passive existence in the heavy element to which they are consigned. To preserve their own existence, and to continue it to their posterity, fill up the whole circle of their pursuits and enjoyments; and to these they seem impelled rather by necessity than choice. Their senses are incapable of making any distinctions; and they move forwards in pursuit of whatever they can swallow, conquer, or enjoy.

A craving desire of food seems to give the ruling impulse to all their motions. This appetite impels them to encounter every danger; and to their rapacity no bounds appear prescribed. Even when taken out of the water, and almost expiring, they greedily swallow the very bait which lured them to destruction. Their digestive powers seem, in some measure, to increase with the quantity of food they consume; and a single pike has been known to devour an hundred roaches in three days. The amazing digestive faculties in the cold maws of Fishes have justly excited the curiosity of philosophers; and have effectually overturned the systems of those who maintain that the heat of the stomach is a sufficient instrument for digestion. The truth seems to be, as some experiments of the late eminent Dr. Hunter evince, that there is a power of animal assimilation lodged in the stomachs of all creatures, which we can neither describe nor define, converting the substances they swallow into a fluid adapted for their own peculiar support. This is effected neither by trituration, by warmth, by motion, by a dissolving fluid, nor by their united efforts; but by some principle in the stomach yet unknown, which acts in a manner very different from all kinds of artificial maceration. The food taken into the stomach or maw is often seen, though nearly digested, still to retain it's original form; and, in fact, is ready for a total dissolution, while to the eye it appears yet untouched by the force of the digestive powers.

But though the appetites of Fishes are insatiable, no other animals can endure the want of food for so long a time. Gold and silver Fishes, which are kept in vases, often live for months without any apparent sustenance; and whether they feed on aquatic insects too minute for observation, or whether they subsist on water only, is not sufficiently ascertained. Even the pike, one of the most voracious of Fishes, will exist in a pond wholly by itself.

Fishes that have small mouths feed on worms, and the spawn of their own tribe; but those which have wider mouths, seek larger prey. The largest mouthed Fishes pursue almost every thing which has life; and they often meet each other in fierce opposition. Indeed, the life of a Fish, from the smallest to the greatest, is but one continual scene of hostility, violence, and evasion. The small fry, sensible of their impotence, wisely retire into those shallows where the greater species are unable to pursue them; there they become invaders in their turn, and live on the spawn of other Fish which they find floating on the surface of the water. Yet even in the shallows they are beset with danger: the muscle, the oyster, and the scallop, lie in ambush at the bottom, with their shells open to receive the inadvertent wanderers; and, shutting them up in these prisons, prey upon them at leisure.

Nor is the pursuit of Fishes, like that of land animals, confined to a single region, or to a single effort.

single effort: shoals of one species follow those of another through vast tracts of ocean, from the vicinity of the pole down to the equator. The cod pursues the whiting from the banks of Newfoundland to the southern shores of Spain; and in the same manner, the cachalot, or blunt-headed whale, pursues the shoals of herrings, and swallows thousands at a gulp.

This is very probably one cause of the annual migration of Fishes from one part of the ocean to another: but there are other motives which unite in causing this; Fishes may be induced to change the place of their residence for one more congenial to their constitutions, or better adapted to depositing their spawn. It is worthy of observation, that Fishes are averse to cold waters, and generally frequent those places where it is warmest. In summer, they abound in the shallows near the shore, where the sun has power to warm the water to the bottom; but, in winter, they frequent the greatest depths of the sea, where the cold of the atmosphere is not sufficiently penetrating to reach them. Fresh-water Fishes are often seen dead after severe frosts, which have been killed by the severity of the cold, or excluded from the benefit of air by the ice.

Though all the various species of Fish live in the water, yet they all require the assistance of air. Those of the whale kind breathe the air like the human race, and rise to the surface every two or three minutes for a fresh inspiration; and those which continue entirely under water must be supplied with air, otherwise they will expire in a very short time. When the ice covers the whole surface of a pond, and thus keeps off the air from the subjacent fluid, we sometimes find all the Fish are destroyed. If a hole be made in the ice, the Fish will be seen flocking to that part, in order to receive the benefit of a fresh supply of the admitted air. Should a carp in a large vase of water be placed under an air-pump, and then deprived of it's air, during the operation a number of bubbles appear on the Fish's body; soon after, the animal begins to breathe more frequently, and with greater difficulty; it then rises to the surface, in order to obtain more air; the bubbles on it begin to disappear; and the belly, which before was inflated, becomes on a sudden sunk, and the animal expires in convulsions at the bottom.

Thus air seems essentially necessary to all animals; yet nothing is more difficult to be accounted for than the manner in which Fishes obtain this requisite supply. When a Fish is in the water, it is easy to observe the motion of it's lips and gills, or at least of the bones on each side which cover them. This motion in the animal is unquestionably analagous to our breathing; but it is water and not air which the Fish actually sucks in, and spouts out through the gills at every motion. The manner in which it performs this operation is thus: the Fish first admits a quantity of water by the mouth, which is driven to the gills; these closing, keep the water so swallowed from returning by the mouth; while the bony covering of the gills prevents it from passing through them till the animal has extracted the proper quantity of air from the body of water thus imprisoned; then the bony covers opening, give it a free passage; by which means also the gills are again opened to admit a fresh quantity of water. Should the Fish be prevented from the free play of it's gills, or the bony covers be kept from action by any artificial constraint, the animal would soon fall into convulsions, and expire in a few minutes.

But though the general respiration of Fishes may be thus explained, the difficulty remains, to know how this air is managed which the Fish separates from the water. There seems no receptacle for containing it; the stomach, which is the principal cavity within the body, is too much filled with aliment for that purpose. There is, indeed, a pretty large cavity, called the air-bladder or swim; but philosophers have long destined this to a very different purpose. The use almost universally assigned to the air-bladder is to enable the Fish to rise or sink in the water at pleasure, according as that is dilated or compressed. The ancients, however, considered the air-bladder as a substitute for the lungs, and as a store-house of air from which the animal might supply it's necessities; and to this latter opinion several of the moderns seem to incline. We shall therefore exhibit both opinions, with their proper share of evidence, and leave the reader to follow the theory which seems most rational and satisfactory. The air-bladder is described as a bag filled with air, sometimes composed of one, sometimes of two, and sometimes of three divisions, situated towards the back of the Fish, and opening into the maw or gullet. Those who contend, that this bag is designed for raising or depressing the Fish in the water, build on the following experiment: a carp being put into the air-pump, and the air exhausted, the bladder expands itself to such a degree, that at last it bursts, and then the Fish sinks, and is ever after incapable of rising to the surface. The air-bladder likewise has been pricked and wounded to let out the air; and on this occasion likewise the Fish sunk, and rose no more. Hence it is inferred, that the use of the air-bladder must be by the voluntary inflation of the animal, to increase the surface of it's body; and thus diminishing it's specific gravity, to enable it to rise to the surface of the water, and keep there at pleasure. On the contrary, when the Fish is desirous to descend, it only exhausts this bladder of it's air; and the superficies of the Fish being thus diminished, it consequently sinks to the bottom.

Such is the account given of the use of the air-bladder; but it does not appear to rest on irrefragable evidence and accurate enquiry. In the first place, though nothing is more certain than that a carp will swell on being put into an air-pump, yet a mouse or a frog will do the same, and in these no air-bladder has ever been discovered. A carp will rise to the surface, but this only evinces that the animal wants air; and when it sinks, it is not from the laceration of the air-bladder, but from it's being totally exhausted of air. The Fish, indeed, after this experiment, will most probably continue to creep at the bottom; and so will all Fish which are sick and wounded, which must be the case with this after such an operation. Thus the previous facts prove nothing, but that when the Fish is killed in an air-pump, the air-bladder is found exhausted, and that must naturally and necessarily happen, for the drain of air by which the Fish is supplied in the natural way will infallibly oblige it to have recourse to all it's secret stores; and as there is an evident communication between the gullet and the air-bladder, the air which the latter contains, will obviously be drawn away. Indeed, it is pretty clear, that the Fish can neither increase nor diminish the quantity of air in this bladder, according to it's own pleasure, any more than mankind can that which is contained in their stomachs. The animal has not one muscle for contracting or dilating

lating this organ; it's aperture is from the gullet; and what air is injected must remain there till the necessities, and not the will of the animal, call it forth as a supply.

However, to render this more evident, it is certain, that many Fish which continually crawl at the bottom, such as the eel and the flounder, are furnished with air-bladders; and many are without any bladder, such as the anchovy and the gudgeon, which swim at ease in any depth. Indeed, the number of Fish that want this organ seems alone a sufficient proof that it is not necessary for the purposes of swimming; and as the ventral fins, which in all Fishes lie flat on the water, seem fully sufficient to support them at all depths, they can have no absolute occasion for this internal apparatus to assist them in rising and sinking. It may, indeed, contribute to those purposes; but it is likewise very probable, that it has another and a more important use.

In every point of view in which we have regarded Fishes, they appear inferior to land animals; in the simplicity of their conformation, in their senses, and in their enjoyments: but, as some degree of compensation, they enjoy that humble existence a much longer term than any other class of animated nature. 'Most of the disorders incident to mankind,' says Bacon, 'arise from the changes and alterations of the atmosphere:' but Fishes reside in an element little liable to change; theirs is an uniform existence; their movements are without effort, and their lives without labour. Their bones, also, which are united by cartilages, admit of indefinite extension; and the different sizes of animals of the same kind among Fishes are very various. They still keep growing; their bodies, instead of experiencing the rigidity of age, which is the cause of natural decay in land animals, still continue increasing with fresh supplies; and as their bodies grow, the conduits of life furnish their stores in greater abundance. How long a Fish, which seems to have scarce any bounds prescribed to it's growth, continues to live, is not ascertained; perhaps the life of man would not be long enough to measure that of the smallest. Two methods, which are more ingenious than certain, have been devised for determining the age of Fishes: the one is by the circles of the scales; the other by the transverse section of the back-bone. By the first method, when the scale of a Fish is examined through a microscope, it will appear to consist of a number of circles, one within another: and, as in trees, their age is known by the number of circles in their transverse section; so, in Fishes, we discover their age by the number of circles in every scale, reckoning one ring for every year. Buffon found a carp, which, by this method of computation, appeared to be upwards of an hundred years old. However incredible this may appear, the accounts of several authors of veracity tend to confirm the discovery. Gesner mentions one of the same age; and Albertus brings an instance of one which existed upwards of double that period.

The skate and the ray, having no scales, their ages may be found by the other method; which is, by separating the joints of the back-bone, and then examining the number of rings, which the surface, where it was joined, exhibits.

For the certainty of these methods it is impossible to vouch; but we have every reason to believe the extraordinary age of some Fishes. But the fecundity of these animals is more extraordi-

nary than their longevity. Some produce their young alive, and others only eggs; the former are the least prolific, and yet they produce in amazing abundance. The viviparous blenny, for instance, produces two or three hundred at a time, which immediately divert themselves by playing round their parent. Those which exclude their progeny in eggs, and are obliged to leave them to chance, at the bottom of shallow water, or floating on the surface, where it is deeper, are much more prolific; their stock being in some measure proportioned to the danger there is of it's consumption. But few of these eggs, in comparison, produce animals, being devoured by Fishes and aquatic birds: still, however, the numbers that escape are sufficient to supply the deep with inhabitants, and to relieve the wants of a very considerable part of mankind.

The number that a single Fish is capable of producing is almost incredible. A single cod is said to produce, in one season, as many of it's kind as there are inhabitants in England. Lewenhoeck assures us, that the cod spawns above nine millions of eggs in one season; and several other species have a proportional increase. But Mr. Harmer has lately pursued the investigation of this curious subject with much more accuracy than any of his predecessors, and has extended his enquiries to a greater variety of species than any other person. The method which he adopted was, that of weighing the whole spawn very exactly; he then took a piece weighing a certain number of grains, and carefully counted the eggs it contained; and by dividing the number of eggs by the number of grains, he found nearly how many eggs there were in one grain. His computation of the number of eggs extended no farther than to those which he could distinguish by the naked eye; though, by this limitation, he omitted many eggs discoverable by a microscope, which might justly have been thrown into the aggregate. The weights he used were avoirdupois, and he reckoned 437½ grains to an ounce. The subsequent table exhibits the general result of his enquiries; the first column containing the number of Fishes which he examined; the second, their weight; the third, the weight of their spawn; the fourth, their fecundity; and the fifth, the season of the year when each species was examined. He has also added other columns, exhibiting the portion of spawn weighed, the number of eggs found in a grain, and the result of examining several varieties of the same species of Fishes of different weights, which may be found in the Philosophical Transactions, Vol. LVII.

Fishes.	Weight.	Weight of Spawn.	Fecundity.	Time
	Oz. Dr.	Grains.	Eggs.	
Carp - -	25 8	2571	203109	April 2.
Codfish -	- -	12540	3686760	Dec. 23.
Flounder	24 4	2200	1357400	Mar. 14.
Herring -	5 10	480	36960	Oct. 25.
Lobster -	36 0	1671	21699	Aug. 11.
Mackerel	18 0	1223½	546081	June 19.
Perch -	8 9	765½	28323	April 5.
Pike - -	56 4	5100½	49304	April 25.
Prawn -	(127 gr.)	- -	3806	May 12.
Roach -	10 6½	361	81586	May 2.
Shrimp -	(39 gr.)	7	6807	May 3.
Smelt - -	2 0	149½	38278	Feb. 21.
Soal - -	14 8	542½	100362	June 13.
Tench -	40 0	- -	383252	May 28.

With respect to the generation of Fishes, the general opinion is, that the female deposits her spawn or eggs; and that after this, the male ejects the sperm or semen on it as it lies in the water, by

F I S

by means of which it is fecundated. The want of the organs of generation in Fishes gives an apparent probability to this: but Linnæus vehemently opposes it; affirming that there can be no possibility of the impregnation of the eggs of any animal out of it's own body.

For a confirmation of this, the general course of nature, not only in birds, quadrupeds, and insects, but even in the vegetable world, has been called in to his assistance, as proving that all impregnation is performed while the ova are in the body of the parent; and this great naturalist supplies the want of the organs of generation by a very strange process, affirming that the males eject their semen always some days before the females deposit their ova or spawn; and that the females swallowing this, it serves to impregnate their eggs. About the spawning season, he tells us, that he has often seen three or four females gathered about the male, and greedily snatching up into their mouths the semen he ejects: he particularly mentions some of the esoces, some peach, and some of the cyprini, in which he had observed that process. But Mr. Tull asserts, that he has frequently seen Fish in actual copulation; and that this is generally performed before the ova arrive at maturity.

All Fishes, except those of the whale kind, are destitute of those parental solitudes which so strongly mark the manners of the greatest part of terrestrial animals. When they have deposited their burdens, they leave their nascent progeny to provide for themselves. Fishes have different seasons for depositing their spawn; and this continues in it's egg state in proportion to the size of the animal. The young of the salmon, for instance, continues in the egg from the beginning of December till the beginning of April; the carp continues in the egg only about three weeks; and the little Gold-Fish of China is still more expeditiously produced. All these, when excluded, at first escape by their minuteness and agility. They rise, sink, and turn, much readier than grown fishes; and, when pursued, they fly for refuge to shallow water. But, with all these advantages, scarcely one in a thousand survives the numerous perils of it's youth. The very male and female which produced them, forgetting all relationship at their departure, are equally dangerous and formidable with the rest,

Such is the general picture of these voracious and insensible creatures. But there are some Fishes, indeed, which possess finer organs, and higher sensations; that nurse their young with care and tenderness, and protect them from all injuries; of which kind are the cetaceous tribe. The cartilaginous kinds, or those which have gristles instead of bones, bring their young alive into the world; and, though incapable of nursing them, they defend them with activity and courage: but the spinous or bony kinds leave their spawn without any protection, being satisfied with their mere production.

Many volumes have been written on the subject of catching Fishes, and of rendering them subservient to the ends of luxury; but such subjects do not properly fall under the naturalist's illustration. Aristotle is famous for having taught mankind to tuberate Fishes in Carthaginian pickle; and Quin, the comedian, for inventing a sauce for the doreé: Mrs. Glasse is famous for her eel-pye; and Mr. Tull for his invention of playing carp, to give it a better flavour. In this manner, our cooks handle the subject, while physicians assure us, that Fishes

F L A

afford very little nourishment as food, and that they soon corrupt; that they are naturally cold and moist, and consequently produce juices of the same kind, which are inefficacious in strengthening the body; that they abound in a gross kind of oil and water; that they have few volatile particles, and are therefore less fit to be converted into the substance of our bodies. In this diversity of opinions, it is the most rational way for every person to follow nature; to eat what experience proves to be agreeable to his constitution; and to leave it to doctors and cooks to dispute about the essential qualities of food, the means of promoting luxury; or repelling disease.

FITCHET. A name sometimes used to express the pole-cat, an animal of the weasel kind.

FIVE-FINGERED FISH. This species of fish, which is very common in the East Indian seas, receives it's name from five black spots on each side, resembling the prints of the fingers. It is about a foot and a half long; it's head is small; it's mouth is large; and it's colour is a shining blue mixed with purple. There are no scales on the body.

FLAIRS. An appellation given by some to the skate, a species of ray.

FLAMBO. A name given by some to a long anguilliform fish, a species of the tænia, called also cavagiro.

FLAMETTE. An appellation given by the French writers to a species of chamas, a shell-fish of the bivalve kind, whose shells are always in part open. This species is as hot to the palate as pepper.

FLAMINGO. A very beautiful and singular bird, whose general conformation and appetites refer it to the crane kind, though it is web-footed like the genus of anseres. Furnished with a longer neck and legs than any other of the crane kind, it seeks it's food by wading among waters; and only differs from them in the manner of seizing it's prey: for as the heron makes use of it's claws, the Flamingo only employs it's bill, which is strong, and well adapted for this purpose; while the claws are feeble and useless.

The Flamingo is a tall, bulky, and most beautiful bird. The body, which is of a vivid scarlet, is about the size of a swan; but the legs and neck are of such extraordinary dimensions, that when it stands erect, it is upwards of six feet high. The expansion of it's wings is five feet six inches, and it's length four feet eight inches. The head is round and small; the bill is about seven inches long, partly of a red colour, partly black, and crooked like a bow. The legs and thighs, which are not much thicker than a man's finger, are about two feet eight inches long; and the neck measures nearly three feet. The feet are weak; and the toes are united by membranes; but of what use these appendages are, does not appear, as the bird is never seen swimming, it's legs and thighs being sufficient to carry it into those depths where it's prey is to be found.

This extraordinary bird was once known on all the coasts of Europe, but is now chiefly found in America. It's magnitude, it's beauty, and the peculiar delicacy of it's flesh, when young, have afforded such incitements for it's destruction, that it has long since deserted the shores frequented by man, and taken refuge in countries where the want of population allows it to range in security. In those desert regions, the Flamingos live in a
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state of society, and under a polity which excites at once our veneration and wonder.

On the first discovery of America, and the coasts of Africa washed by the South Sea, the Europeans found Flamingos on several shores of either continent, gentle and unsuspicious of mankind. In those extensive solitudes, where they had fixed their abodes, they had long enjoyed security; and knew no enemies, but such as they could either evade or oppose. The negroes and native Americans possessed but few destructive arts for killing them at a distance; and when the birds perceived the arrows, they contrived a way to avoid them. But when the Europeans beheld such desirable prey, it was far otherwise. Unaccustomed to fire-arms, the Flamingos were lost in amazement, when they saw one of their companions fall; they neither tried to avoid their fate by flight nor cunning; and numbers were destroyed before the rest recovered from the consternation that seized them on the first attack. At present, however, the Flamingo is not only one of the most rare, but one of the shyest birds in the world, and the most difficult of approach. They chiefly frequent the most deserted and inhospitable shores, near salt-water lakes, and swampy islands. In the day-time, they come down to the banks of rivers; and at the approach of night, they often retire to the interior and more mountainous parts of the country. When they suffer themselves to be seen by mariners, they always appear drawn up in a long close line of two or three hundred together; and, according to Dampier, exhibit, at the distance of half a mile, the exact representation of a long brick wall. But when they seek for food, their rank is broken; yet not before they have stationed one of their number as a watch, whose sole employment is to observe and give the signal of danger while the rest are feeding. As soon as this faithful sentinel perceives the remotest appearance of danger, he screams with a voice as shrill as a trumpet, and instantly the whole band are on the wing. When feeding at ease, they are remarkably silent; but, when alarmed, they fill the whole air with intolerable screamings.

Hence it appears, that the Flamingos, having once experienced the tyranny of man, avoid him with the most cautious circumspection: however, this caution seems to originate in fear, and not in antipathy; for in some villages along the coast of Africa, L'abat assures us, the Flamingos come in great numbers, and take up their residence among the natives. There they assemble by thousands, perched on the trees within, and in the vicinity of these villages; and the clamour they raise is so powerful, that it may be heard at the distance of a mile. The negroes are much attached to their society; and consider it as a gift from Heaven, and a protection from accidental calamities. The French who have been admitted to this part of the African coast, reluctantly behold such a quantity of game untouched, and rendered useless by ignorance and superstition; but they never venture in public to destroy those reputed sacred fowls, lest their lives should atone for their temerity. In their wild state, the Flamingos are sometimes shot by mariners; but their young, though they run excessively fast, are more frequently overtaken. L'abat says, he has frequently caught them in nets extended round the places where they breed. When their long legs are entangled in the meshes, they are then unqualified to escape; nevertheless, they continue to combat with their destroyers, mak-

ing use of all those instruments of defence with which nature has supplied them. When taken old, they still retain their natural ferocity; they refuse all nourishment; and use their bills and claws on every opportunity to annoy their tyrants. The fowlers, therefore, finding it impossible to tame them, are compelled to destroy them; otherwise they pine and die, if left to themselves in captivity. Their flesh is black and hard; though, Dampier says, well-tasted; but that of the young ones is more agreeable to the eye than to the palate. However, of all other delicacies, the tongues of the Flamingos are most celebrated. A dish of these, says Dampier, is a feast for an emperor. In fact, the Roman emperors considered them as the highest luxury; and history informs us, that one of them procured fifteen hundred Flamingos tongues to be served up in a single dish. The tongue of this bird is certainly very large; but what peculiar flavour it may possess, we leave to be determined by the professors of epicurism. It is probable, that the beauty and the scarcity of the bird might be the first inducements for studious gluttony to fix on it's tongue as a dainty for the appetite.

When these birds migrate from one place to another, they repeat the sound Tococo, in a very vociferous manner; and hence the Canadian savages have given them that appellation. In their flight they appear to singular advantage, seeming as bright a red as a burning coal. Their manner of feeding is very particular: the bird thrusts down it's head, so that the upper convex side of the bill only touches the ground; and in this position the animal appears, as if it were standing on it's head. In this attitude it paddles and moves the bill about, seizing whatever fish or insect happens to come in it's way. For this purpose, the upper chap is notched at the edges, so that it can hold it's prey with superior security. Catesby, however, exhibits a different picture of these birds manner of feeding; for, according to him, they thus place their upper chaps undermost, and so work about, in order to pick up seeds from the bottom of the water, resembling millets: but as in picking up these seeds they necessarily take up great quantities of mud, their bills are serrated in such a manner that the soil flows out while they swallow the grain.

The season of incubation depends greatly on the climate in which they reside: in North America they breed during our summer; and on the other side of the line they likewise chuse the most favourable season of the year. They build their nests in extensive marshes, and where they are least obnoxious to the danger of a surprize. The nest is not less curious than the animal which builds it, being raised from the surface of the water about a foot and a half, and formed of mud indurated by the sun, or the heat of the bird's body. It resembles a truncated cone in it's figure; and at the top is excavated in the shape of the bird.

The female Flamingo, like all large fowls, lays but a small number of eggs. Her nest has seldom been found to contain more than two; and as her legs are immoderately long, she straddles on it's nest, while they depend on each side into the water.

It is a long time before the young are able to fly; and when they are early caught, they are tamed with facility. In five or six days they become familiar, eat out of the hand, and drink salt-water in abundance. But though they are easily domesticated when young, they are not reared without the

F L E

greatest difficulty, generally pining away for want of their natural supplies. While young, their colours are very different from those lively tints they acquire with age. During their first year, they are covered with whitish plumage, variegated with grey; in the second year, the whole body is white, with a few slight tints of scarlet, and the great covert-feathers of the wings are black; the third year equips the bird in all it's destined beauty, the plumage of the whole body becoming like scarlet, except a few feathers in the wings, which still retain their sable hue. Of these beautiful plumes the savages fabricate a variety of ornaments; and the entire skins of these birds are sometimes made up into muffs by the Europeans. But since we have acquired the art of dyeing feathers of the brightest scarlet, the value of these has been much diminished.

FLAT-FISH. The fish so called is a native of the East Indian rivers. It is about a foot long; the mouth is wide; and the skin is smooth, and without scales. The colour of the body is silvery; and on the back is a small fin, with one on each side. Under the belly likewise is a single fin, which supplies the place of the tail. This fish is excellently flavoured, but so extremely full of bones, that it is little valued.

FLEA. A genus of the aptera class of insects, of a roundish compressed figure.

Few are unacquainted with the agility and blood-thirsty disposition of the Flea; of the caution with which it begins the attack; and the quickness with which it avoids the pursuit. This insect, which not only preys on man, but also on the dog, the cat, and various other animals, is found in every part of the world; but in some countries it is more plentiful and more troublesome than in others. In Italy and France it's size is increased, but it's bite is less severe than in England; and it would seem that it's force increased with the coldness of the climate; and, though less prolific, that it became more predaceous.

When examined with a microscope, the Flea will be observed to have a small head, large eyes, and a roundish body. It has two short antennæ, or horns, composed of four joints; and between these lies it's trunk, which it buries in the skin, and through it imbibes the blood in large quantities. It's body appears to be curiously ornamented with a suit of polished sable armour, neatly jointed, and beset with a multitude of sharp spines, almost like the quills of the porcupine. It's legs are six in number; the joints of which are so adapted, that it can fold them up one within each other; and, when it leaps, they all spring out, whereby it's whole strength is exerted, and it's body raised above two hundred times it's own diameter.

The generation of this familiar vermin, which was first discovered by Signior Diacinto Cestone, affords something very curious. Fleas bring forth eggs or nits, which they deposit on animals that afford them a proper safeguard. These eggs being very round and smooth, usually slip down till they are detained by some inequalities on the cloaths or hairs where they are lodged; and from them are hatched certain white worms which feed on the scurfy substance of the cuticle, the downy matter collected in the piles of cloaths, or other similar substances. In the space of fourteen days they arrive at a tolerable size; become very lively and active; and, if disturbed, they suddenly roll themselves up in a ball. Soon after this, they begin to creep, like silk-worms, which have no legs;

F L E

and then they search out lurking-places, where they spin silken threads from their mouths, and with these they inclose themselves in small round bags or cases, of a snowy white colour internally, but dirty without. In this position they remain for a fortnight longer; after which they burst from their confinement perfectly formed, and leave their exuviae in the bags.

By keeping Fleas in a glass tube, corked at both ends, but so as to admit fresh air, their several actions may be observed, and particularly their mode of copulation, which is performed tail to tail; the female, which is considerably the largest, standing over the male.

The Flea may easily be dissected in a drop of water; and by this means the stomach and bowels, with their peristaltic motion, may be very clearly discovered. Lewenhoeck affirms, that he has seen innumerable animalcules, of a serpentine shape, in the semen masculinum of a Flea: be this as it may, it is certain that their testis, penis, with the veins and arteries, though minute beyond conception, are yet perfectly distinguishable.

Nothing, however, is more surprizing than the strength of this little insect. Had man an equal degree of power in proportion to his bulk, the history of Samson would be no longer miraculous. A Flea will draw a chain an hundred times heavier than itself; and, to compensate for this force, will eat ten times it's own size of provision in a single day.

FLEA, WATER, ARBORESCENT. This insect, the monocolus of authors, is about the size of the common Flea; and appears to the sight, unassisted by the microscope, to have but one eye, whence it receives it's classical name. However, the fact is, on account of the smallness of the head, both eyes seem united, being situated in the trunk of the insect, which is very small and sharp-pointed. Examined by the microscope, the structure of the eye seems to be reticulated, or formed like a net.

Insects of this kind, which are of a blood-red colour, are sometimes seen in such multitudes on the surfaces of stagnant waters, as totally to change their colour; and hence many fanciful people have concluded that they were turned into blood.

Swammerdam informs us, that a certain renowned professor of Leyden was for a time much astonished by an appearance of this kind. Being very intent on his studies, he heard a confused noise; of which, as it seemed to increase by degrees, he was desirous of discovering the cause by means of his servant; who, on his return, appeared almost petrified through fear, and told his master, in a tremulous voice, that all the waters of Leyden were turned into blood. On this the gentleman proceeded directly to the water thus discoloured, and poured some of it into a glass, and after viewing it attentively, he observed that it abounded with an infinite number of these little red insects, which had turned the whole fluid into that sanguineous colour.

This insect is particularly curious on account of the formation of it's arms, and the motion it makes with them in the water. By means of these the little creature can move in a straight line, waving it's arms as a bird does it's wings in the air, sometimes upwards, at others downwards, sometimes to the right, and at others to the left, still, however, proceeding in one uniform and regular course. By striking the water with it's arms, it can ascend with great velocity; and, by beating it in a different direction,

F L O

rection, it can dive with equal facility. As these motions are very rapid, the little animal appears as if jumping in the water; its head always tending to the surface, and its tail stretched downwards.

The Water-Flea is produced from an egg, which, when excluded, is carried on the back of the female; and, soon after, is seen floating round her in the water. At first, it exhibits the appearance of a very small whitish insect, endued with a very nimble motion; and, except in colour, it undergoes no change, only continuing to grow larger and redder in proportion to its age.

These insects sometimes remain several days on the surface of the water; and, at other times, they are only seen at the bottom; but, whether at the bottom or the surface, they are constantly in motion. They shed their skins like most other insects; and these exuviae so exactly resemble the creatures themselves, that the slough may easily be mistaken for the animal.

FLESUS. An appellation used by some authors to express the flounder, the *passer fluviatilis* of naturalists in general.

FLITTER MOUSE. A name sometimes given to the common bat.

FLORUS. An appellation given by Aldrovandus, and some other naturalists, to the bird generally known in England by the name of the whinchat; a kind of the *œnanthe*, or fallow-finch.

FLOUNDER; the *pleuronectes flesus* of Linnæus. This fish may be easily distinguished from any other of the same genus by a row of small sharp spines furrounding its upper sides, placed just at the junction of the fins with the body. The upper part of the body is of a pale brown colour, sometimes marked with a few obscure spots of dirty yellow; and the belly is white. A variety of this Flounder is sometimes found with the eyes and the lateral line on the left side; of which Linnæus makes a distinct species, called *pleuronectes passer*; but, as this fish differs from the common kind in no other respect, it does not seem reasonable to separate them.

The Flounder is a native of all parts of the British seas; and it even frequents those rivers at a considerable distance from the salt-water; for which reason some writers have termed it *passer fluviatilis*. In rivers, however, it never attains to any great size; but its flesh is reckoned sweeter than that of those Flounders which inhabit the sea. The weight of the largest of this species seldom exceeds six pounds.

FLOWER-ROOT WORM. A peculiar species of Fly-Worms which inhabit the bulbous roots of flowers. Towards the end of autumn, when the roots of narcissuses are taken out of the earth, each of them is very frequently found to contain a single worm, which eats and destroys them. Such roots as contain these pernicious bellers may be easily known, by having small apertures in some parts of their surfaces, at which these destructive animalcules entered when small, and which probably serve them in a larger state for the purpose of respiration. The interior parts of these bulbs are always found rotten, and the injured Worms lie in a kind of brown dirt made by the watery liquid excrements, mixed with the fragments of the roots which they have consumed.

These Worms undergo all their transformations in shells formed of their own skins, which are of the same ovated shape with those of blue flesh-

F L U

flies, but considerably larger, and of a greyish colour. This, however, is not all the difference perceptible between those shells; for, on the anterior and superior parts of them are two horns which seem intended to convey the air into the corselet; the old stigmata, which served the creature in its Worm-state, being now obliterated. After having undergone all the necessary changes, the shell bursts open in the month of April, and emancipates the inclosed fly.

This fly has at first the appearance of an humble bee; and, without some degree of attention, they are not easily distinguished. It is covered with black, yellow, and reddish hairs, after the same manner as the common humble bees; but its antennæ, which are of the battledore fashion, plainly prove that it does not belong to the bee kind, even did not its having only two wings evince the contrary.

FLUDER, or SEA-FLUDDER. A water-fowl of the *colymbus* or diver kind, described by Gefner, and some other authors, under the title of *colymbus maximus*. It is nearly of the size of the goose, and moves very slowly either in the water, on land, or in the air. Its beak is long; its legs are very short; it has a shrill voice; and it dives to a prodigious depth. Its feet are webbed; its back is of a greyish colour; and its belly is white. It very nearly approaches to the northern *colymbus*, called the lumme, differing only in colour, which in birds is frequently found to be only an accidental variety.

FLUSHER. The common appellation for the lesser butcher-bird, called by authors the *lanius minor*, and by Aldrovandus *lanius tertius*. The beak is long, black, and a little hooked at the extremity; the mouth is internally of a yellow colour; and the tongue is jagged. The middle of the back and the smaller wing-feathers are a reddish brown; the head and rump are grey; a broad line passes on each side of the head, rising from the angle of the beak; the belly is white; the throat and breast are whitish with a reddish cast; the greater plumage of the wings is mottled with brown and black; and the legs and feet are a deep bluish black.

This bird builds in holly-bushes, and other similar situations. It lays six oblong eggs, white at the smaller end, and ornamented with a circle and reddish spots at the other. It is common in Germany, and in the northern parts of England. See **BUTCHER-BIRD**.

FLUTA. A name given by Gaza and some others to the common sparus, distinguished by Artedi by the appellation of the plain yellow sparus with a large annular black spot near the tail.

FLUTA is also a name given by Columella to the *muræna* of Aristotle; which in the Artedian system is distinguished under the name of the *muræna* without pectoral fins; a peculiarity evidently and obviously marking it from all others of the kind.

FLUVIATILES COCHLEÆ. An appellation given by naturalists to those species of shell-fish which are never found in salt-water. These, though much less numerous than sea-shells, are yet of a greater variety and beauty than is commonly supposed. Such as have already fallen under the examination of conchologists may be arranged under their proper genera, in the subsequent manner. The univalves comprehend two species of *patellæ*; one having a beak at the summit of the shell; and the other being destitute of this ap-

FLY

dage, and as smooth as the common patellæ or sea-limpets.

There are five species of limaces, or snails; there are three species of the fresh-water neritæ; there is one species of the trochus; there are three species of the turbo; seven of the buccina; four of the dolia, or conchæ globosæ; and four of the cornu ammonis.

Of the bivalve fresh-water shells, there are five species of the chamæ, and six of the muscle kind; and of the pecten kind there is only one species. Naturalists have not yet discovered a single species of the multivalve class.

To reduce the several species to their proper genera, is not very difficult, from a recollection of the characters of each genus of marine shells. The limpet is a flat shell, elevated into a sort of cone at the summit. In the snail kind, if the mouth be round, the shell is a true limax; when semicircular, the shell is a nerita; and, when oval or depressed, and the clavicle long, it is then a trochus. The turbo, or screw-shell, is known by its long and slender figure. The buccina are long-shaped, tailed, and narrow-mouthed; and the dolia are somewhat of a subglobose figure. The cornu ammonis and the umbilicated snail are often confounded together by those who observe only their external resemblance among fresh-water shells; but in reality they are sufficiently distinct, the cornu ammonis being externally marked with circular ridges, and divided internally into several separate cells, like the common fossil kinds; whereas the umbilicated snail is of an even external surface, and has only one internal cavity: the snail also has its mouth placed towards one side, and the cornu ammonis in the middle. The chamæ are known by their roundish figure, and the muscles by being oblong; and the pecten is distinguished by its ears and striæ.

FLY. A complete description of the various classes, genera, and species, of Flies, constitutes a very extensive branch of natural history. The number of the species of Flies perhaps exceeds even that of the butterfly; but Flies being generally very minute animals, less beautiful and less attractive, naturalists have not exerted their industry to reduce them to such determinate bounds as the former. However, the libellulæ and the cicada, in magnitude and beauty, exceed many of the butterfly tribe; and these have been observed with attention, and described with accuracy.

In their original state, many Flies are either concealed from our view, or detained among very noxious substances: it is only in their winged state that they become agreeable objects of our researches; and it may be proper therefore to begin their general history in that stage, occasionally descending to an enumeration of their previous habits and natures, when the lights thrown on the subject are sufficiently clear to direct us.

It is generally believed, but certainly without foundation, that those minute Flies which we observe during the vernal season will live and grow larger as summer advances; but the fact is, Flies, like all other insects which undergo a metamorphosis, arrive at their full size as soon as they become denizens of the sky; and, having fluttered through their contracted lives, and made provision for posterity, they leave the stage of existence to another succession of animals.

The general and most obvious character of Flies, by which they are distinguished from other winged

FLY

insects, is in being furnished with transparent wings, totally free from the farina or dust visible on those of butterflies; and in having no cases or covers for them. Thus, by this simple character of having transparent and naked wings, they are clearly distinguished from the butterfly, the beetle, the grasshopper, and other classes of winged insects.

The principal parts or members of which Flies are composed are, the head, the corselet, and the body. To the corselet the wings are appended; and in the body are contained the stomach, the intestines, the parts of generation, and a considerable part of the tracheæ. The head is usually united to the corselet by a very short neck, on which it can often turn as on a pivot. Some Flies indeed have, as it were, the rudiments of two corselets, one separated from the other; in which case, the first is usually very small, and to the second the wings are affixed. The corselet is the most prominent and rounded part of the insect; it is always possessed of the greatest strength, and is frequently the thickest: the Dragon-Flies, and some water-insects, are of the kind which have double corselets, or corselets divided into two.

The most obvious distinction for a classical arrangement of Flies, is drawn from the number of their wings; some having only two, and others four. Yet this plain and obvious division has not always been observed by writers on natural history; and some have even neglected to inform us what number of wings belonged to the species they were describing.

The first general division, therefore, of Flies, is into that of the two-winged and the four-winged kinds. A cursory view is generally sufficient to determine to which of those divisions a Fly belongs; but if we afterwards examine the insect with more attention, and consider the organs by which it receives its nourishment, it may be observed that some species are able to protrude this organ to a considerable distance from their heads; and that, when the Fly is in a state of rest, it is either folded up, shortened, convolved, or laid closely down; but, when the creature wants to use it, is unfolded, lengthened, extended, or elevated. Naturalists have given this organ the name of a trunk: but, in many species of Flies, this appendage is wanting; and such have only an aperture serving for a mouth, surrounded with lips and some other parts. Some of these mouths have nothing analogous to teeth about them; others, however, have teeth, saws, or grinders, placed externally, and moveable as in the caterpillar kinds, with which the Flies tear and destroy leaves, fruits, and flesh; and, lastly, there are also some Flies to which nature has allotted both a trunk and these organs.

These different characters give us very naturally the distinctions of four subordinate classes under the two former general ones. The first class contains those which are furnished with a trunk, but have no teeth or saws; the second comprehends those which have a mouth, without any apparent teeth; the third, those which have a mouth furnished with teeth; and the fourth, those which have both a trunk and teeth.

All the two-winged Flies belong to the two first of those classes: the great blue Flesh-Fly, the small Flies which frequent our houses, and the gnats, all being provided with trunks without teeth, belong to the first class, and the Spring Fly so common in gardens, and a species of Fly resembling

FLY

the gnat kind, and having a mouth without any teeth, belongs to the second class.

The four-winged Flies; which are extremely numerous, fill up the two remaining classes. All the bee kind have a trunk and two teeth; all the wasp kind have a mouth furnished with two teeth; and, besides these, there are several four-winged Flies which have the characters of the second class, particularly all the papilionaceous Flies, produced from water tæniæ, which have a mouth without any teeth. Several small four-winged Flies also belong to the first class; such as the flying pucerons, and the false pucerons, which have all trunks without teeth; and to this class likewise the cicadæ are properly referred.

A fifth class may likewise be established, but it only comprehends two known species of Flies; this is such whose heads perform the office of trunks. Flies of this kind have very long heads, terminating in a sort of-beak, somewhat like the feathered tribe; but this beak has no aperture except at the extremity; nor can the Fly alter it's position without altering that of the whole head. At the end of this kind of trunk are placed the teeth, or other organs, with which the insect collects it's food. The scorpion Fly, a very beautiful creature, frequently seen skipping and leaping about flowers, affords a specimen of this kind.

Subordinate to these general classes, others are deduced, from whatever forms the most obvious and essential distinction between these little animals. The figure of the body often presents such distinctions; and from it three subordinate classes are formed under the five general ones: the first is composed of those Flies whose bodies are short and broad; the second, of those with long bodies; the third, of those whose bodies are fastened to the corselet only by a fine filament; and, under all these, the several genera are to be established from other inferior but constant and invariable marks, such as the manner in which they carry their wings, the figures of their antennæ, the position of their trunks, and other essential variations.

The bodies of Flies being extremely different from each other, even those whose general conformation refers them to the same class, are not without their distinctions, by which alone they may be made to establish subordinate genera. Among the Flies which have short or ellipsoide bodies, some are extremely flat and thin; such are those of the Flies produced from worms feeding on the pucerons; and others have the hinder part of the body incurvated in the form of a hook.

In Flies, the extremity of the body is usually smaller than the adjoining parts; but there is a variety found in the nests of swallows, the extremity of whose body is considerably the largest. However, not only the form of the body, but the differences in the filament, by which in many genera it is connected to the corselet, may furnish marks for the distinctions of the subordinate genera. The hinder part of the body may also furnish abundant matter of distinction. Those Flies which carry stings in their tails, have in that circumstance alone a sufficient distinction. But, exclusive of those which have stings, the females of several genera have organs placed in the extremities of their bodies, which serve as a kind of auger to pierce the body in which they are to deposit their eggs. Several of the female ichneumons are furnished with this kind of instrument; and there are others which have a long and sharp piercer, partly lodged un-

FLY

der the belly, or in the body; of which kind are the cicadæ, and many others. Nor is this the only provision which nature has afforded these creatures for their protection or defence; some have a serrated organ behind; and others one or more long slender filaments, which in their form and structure have some resemblance to the antennæ. The genera of Flies may therefore very properly be distinguished by such appendages: the ephemerons, and many other species among the four-winged Flies, are furnished with them; and, among the two-winged kinds, the small Fly, which is the male gall insect, affords an example of them.

Those Flies which proceed from water-worms, according to their several species, present some varieties to the curious in the manner of their egress from their shells, when they quit the nymph state, in order to assume their last and most perfect form. The long water-worms, composed of many rings, and with funnel-fashioned tails, constructed with apertures for the admission of air, and surrounded with a multitude of hairs, retain in their shell-state so much of their original form, that they are not easily distinguishable. In each of these, the nymph occupies only a small part of the cavity; and, in many of them, the Fly is produced perfect in five or six days. At the expiration of this time, the nymph, having acquired it's full strength, begins to exhibit the first indications of life in attempting to obtain it's liberty. To accomplish this, nature has so provided for the inclosed Fly, that the head is but slightly connected to the second ring of the body; but the creature, in this state, not being lodged in that part of the worm, can make no efforts against it; all it's exertions are applied to force an aperture in the second ring, like that in the back of the caterpillar's skin when it is about to cast it's exuviae. For this purpose, the inclosed Fly inflates and swells it's head; and then thrusts out the bladder from it's anterior part, with which these Flies are provided, in this stage of their existence, on this very account. When this aperture is effected, the head of the worm is in some measure separated from the body; and the efforts of the Fly to push itself forward, finish that separation, and leave an opening of a proper size for the egress of the Fly.

The Flies produced from this species of worm are liable to considerable danger from the element which formerly nourished them; and they are as easily drowned as those produced from worms which spend their lives on dry land. These Flies, which are of the short-bodied kind, bear a strong affinity to the common great blue flesh-flies; they have fleshy trunks furnished with lips, and are destitute of teeth; but, though thus far the similarity is entire, the characteristic distinctions are sufficiently obvious. The first is, that the antennæ of this species are composed of granulated filaments; whereas those of the other are of the battledore kind: the wings of the flesh-fly are not crossed on the body; whereas those of this Fly are. But the most conspicuous variation is, that it has two oblong and slender bodies, of a crustaceous structure, inserted in the upper part of the corselet, and directed backwards.

Some of the more remarkable species of Flies are as follow; others are arranged according to their names.

FLY, BRIEZE, or GAD-FLY. See CAP-FLY.

FLY.

FLY

FLY, FLOWER. A small, but very beautiful Fly, described by Clusius. The general colour is black; the eyes are white; on the back are seven yellow spots; and the two wings have a silvery appearance.

FLY, GREY, OR TRUMPET-FLY. This is a pretty large species: the body is of a dusky grey colour, approaching to black; the breast is beset with a great number of long yellow hairs; the wings are large and transparent; the figure of the body is oblong; and the eyes are large and black. The female deposits her eggs in the nostrils of sheep, deer, and some other animals. It is called the Trumpet-Fly from a peculiar noise it makes during the heat of summer; but Linnæus gives it the name of *oestrus*, and refers it to the Gad-Fly genus.

FLY, HORNET. This species is as large as the common Hornet; and so nearly resembles it, that an incurious observer cannot distinguish the difference. The head is large; the snout, which is long and black, has a sharp point; and the eyes are prominent. The breast is large, bunched, and of a dusky colour; but the wings, legs, and belly, are an iron grey; and the upper part of the body, which consists of seven joints, is black and yellow.

FLY, HORNET, VIRGINIAN. This insect is equal in size to our largest Flies: the head and eyes are black, with a white line running from the shoulders to the mouth; and the mouth itself is armed with a long and strong weapon. The shoulders are of a blackish brown colour; and it has two silver wings. At the back part there are seven or eight joints of a whitish colour; but the other parts, except the belly, which is of a yellowish ash-colour, incline to black.

FLY, HORNET, MUSCOVY. This species has a very long body; and large oblong eyes, which occupy the greatest part of the head. The snout is black, hardish, and divided into three parts; and with it the insect can penetrate cloth, or other substances of a similar consistence. Linnæus gives the general appellation of *afilus* to Flies of this kind; of which he enumerates four sorts, viz. the rapacious *afilus*; the hairy *afilus*; the *afilus* with round wings; and the *afilus* which stings the legs through the stockings.

FLY, HORSE, COMMON. The body of this insect is pretty large, and of an oblong shape rounded at the extremity; the skin is smooth; the eyes are large; the wings are transparent; and the colour is greyish. Each of the legs is armed with four short sharp claws; and the snout is clavated, of a cylindrical shape, and blunt at the extremity.

FLY, HORSE, GERMAN. This species has a greyish head; large black eyes, and broad transparent dusky coloured wings marked with iron-grey lines. The breast and body are grey, except that a triangular white spot extends quite down the back; the thighs are black; and the legs are yellow.

FLY, HORSE, EAST INDIAN. The bite of this most pernicious insect is very severe. It is about two inches long, nearly the same in breadth, and of a brown colour, with a yellow streak along the back. This Fly builds it's nest with great care in the rafters of buildings, where it deposits it's eggs, and hatches it's young. It feeds on fruit, and, when killed, has a most disagreeable smell.

FLY, HORSE, CURSED. The body and under-side of this Fly are of a shining green colour, which has the brilliancy of polished metal; the tips

FLY

of the wings and the under-side are dusky; but the upper wings, which are of a light brown hue, are very thin and transparent.

FLY, HORSE, PURPLE AND BROWN. This species is a native of the West Indies. It's wings are of a dull purplish brown colour variegated with some transparent spots. Linnæus gives these Flies the name of *hippobosca*.

FLY, ICHNEUMON, COMMON. This insect has a long, slender, black body; the head, breast, and feelers, are of the same colour; the legs are reddish, long, and slender; and the wings are transparent, except that there is a black spot near each of their edges. A weapon projects from the tail, longer than the whole body, consisting of three filiform rays, the middlemost of which is red, and the two exterior ones black. Ray gives this Fly the appellation of the Wasp Ichneumon, with a slender, longish body, and three very long bristles at the tail.

FLY, ICHNEUMON, WITH SILVER-COLOURED WINGS. This species has an oblong body, of a black colour, with two black feelers. The wings are marked near their upper edges with blackish spots; the legs are reddish; and from the tail proceed three long hairs. This insect, which very nearly resembles the former, has four wings like all the rest of the genus.

FLY, ICHNEUMON, WHITISH. This species is entirely white, except four black spots on the wings, which the insect, when sitting, keeps erect. It has six feet, two globous prominent black eyes, and two short black feelers. The body is slender, round, and upwards of half an inch long; there are three bristles at the tail, of equal lengths with the body, which, in the act of flying, the creature spreads into a triangular figure. This Fly makes it's appearance in May and June.

FLY, ST. MARK. These Flies generally make their appearance about St. Mark's day, when they are seen in prodigious numbers. They are somewhat smaller than the large blue Flesh-Flies, and have neither trunks nor teeth; but, notwithstanding this seemingly innocent organization, they are very mischievous, particularly in gardens. They are found about fruit-trees, sitting on the leaves, and on the flower-buds, which they essentially injure, by sucking the juices of those tender parts, and either destroying them before they expand themselves, or rendering them very weak.

Some writers gravely tell us, that these Flies were originally provided with stings; but that, being found extremely noxious, St. Mark deprived them of these offensive weapons throughout all generations. Ridiculous as this story may appear, it is firmly believed in many Roman Catholic countries, especially among the vulgar. The mouth of the St. Mark's Fly is of the same mechanism with that of the tipula, being composed of two membranous lateral lips, like the two valves of a shell-fish, which defend and cover two internal fleshy lips.

The male may be easily distinguished from the female by having a much larger head, and reticular eyes which in a manner cover the whole head. The wings of this Fly are somewhat longer than the body, and crossed in such a manner as that one of them entirely covers the other.

The peculiarities attending these Flies, when they quit the worm state to enter into that of the chrysalis or nymph, are worthy of observation. The worm appears to be in great disorder, and

FLY

gives itself various contortions, till at length the skin cracks on the surface of the back: immediately after which, the anterior part of the nymph appears at the aperture; and thus forcing it's way out by degrees, the head becomes totally useless, and is therefore left with the skin. The last transformation of this insect, or the emancipation of the Fly from the nymph state, exhibits nothing very singular, being performed in the same manner that other animals of the same kind undergo these important revolutions in their lives.

FLY, WASP. This insect is as large as the common Wasp, which it strongly resembles both in shape and colour. The head is smooth and yellowish; the body is blunt; the joints at the edges are a pale yellow; and the snout is long and pointed.

FLY-CATCHER. A genus of passeres in the Linnæan system, including twenty-one different species; the characters of which are, that the bill is almost triangular, bent inwards, notched on both sides, and beset with bristles.

FLY-CATCHER, COMMON, OR SPOTTED; the *Muscicapa Griseola* of Linnæus. This bird of passage in Great Britain appears in the spring, breeds up it's young, and then quits the island about August. It builds it's nest on the sides of trees, towards their middle; and, according to Morton's History of Northamptonshire, in the corners of walls, where spiders leave their webs. When the young brood are capable of flying, the old ones retire with them into thick woods, where they frolick among the top branches of the trees; dropping from the boughs sometimes in a perpendicular direction on the Flies that sport beneath them, and rising again in the same attitude. They feed also on cherries, of which they appear to be excessively fond.

The head of this bird is large, and brownish obscurely spotted with black; the back is of a mouse-colour; the wings and tail are dusky; and the interior edges of the quill-feathers are edged with pale yellow. The breast and belly are white; the throat and sides under the wings are dashed with red; and the legs and feet are short and black. The bill is broad at the base, round which grow several short bristles; and it is ridged in the middle.

FLY-CATCHER, PYED; called also the **COLD-FINCH;** the *Muscicapa atricapilla* of Linnæus. This species is very rare in England. It is smaller than the hedge-sparrow; the bill and legs are black; the forehead is white; the head, cheeks, and back, are black; the coverts of the tail are spotted with white; and those of the wings are dusky transversely barred with white. The quill-feathers are also dusky; the exterior sides of the secondaries are white, and the interior dusky; the middle feathers of the tail are black, the exterior being marked with white; and the entire under-side of the body is white.

The female differs from the male in having a dusky brown head, of which colour likewise is the whole upper part of her body; the white in her wings is less conspicuous than in the male; and the under side of her body is a dirty white.

FLY-CATCHER, BLUE. The bill of this bird is black; the crown of the head, the back part of the neck, the back, rump, and covert feathers of the wings, are blue inclining to slate colour; the tail and quill-feathers of the wings are dusky, but the outer quills are white at their bases. The throat and sides of the head are black, and the

FLY

same colour extends from each side of the neck to the wings; the covert-feathers under the tail are entirely white; and the legs and feet are of a dusky brown hue. This species is a native of America, and is probably a bird of passage.

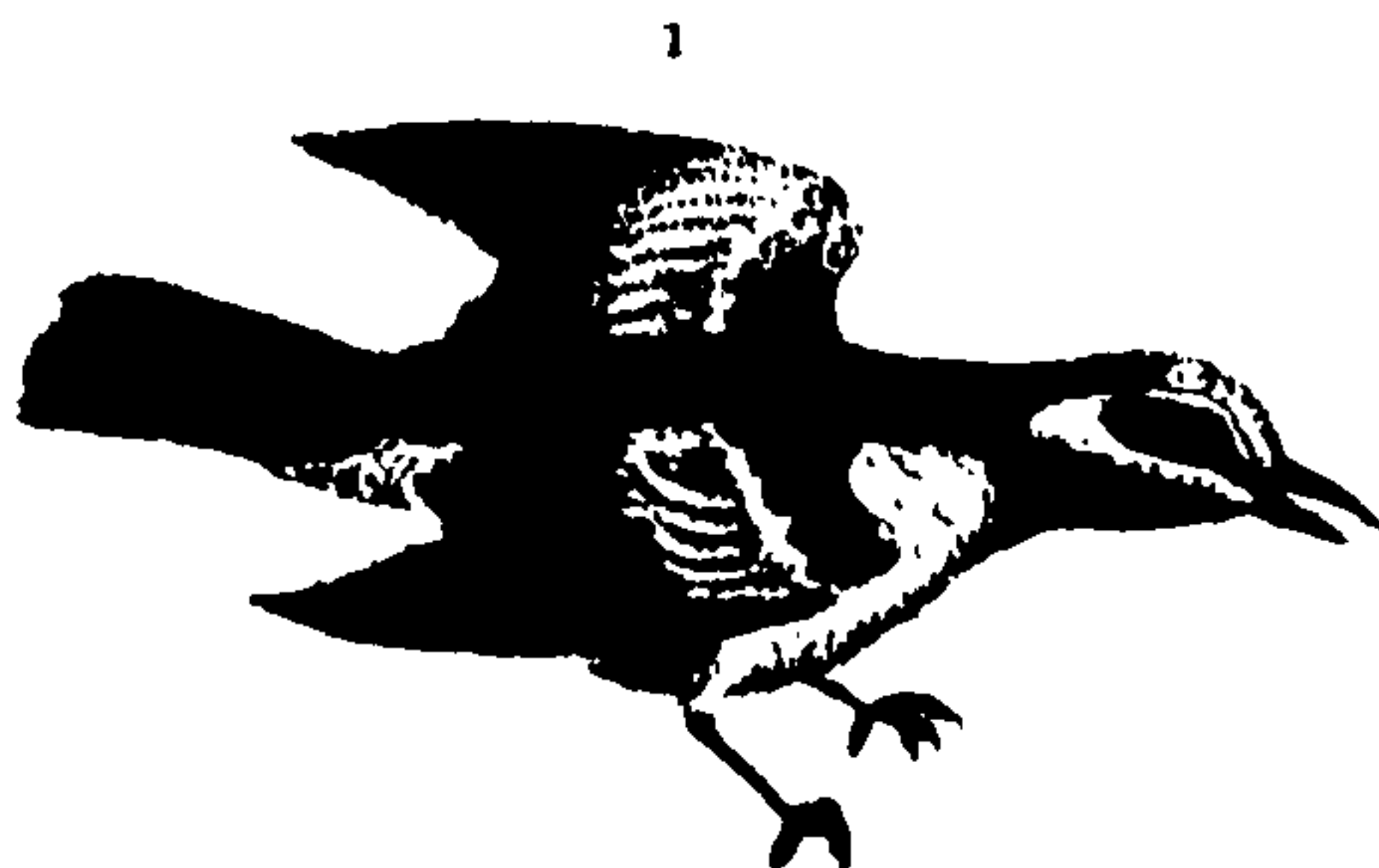
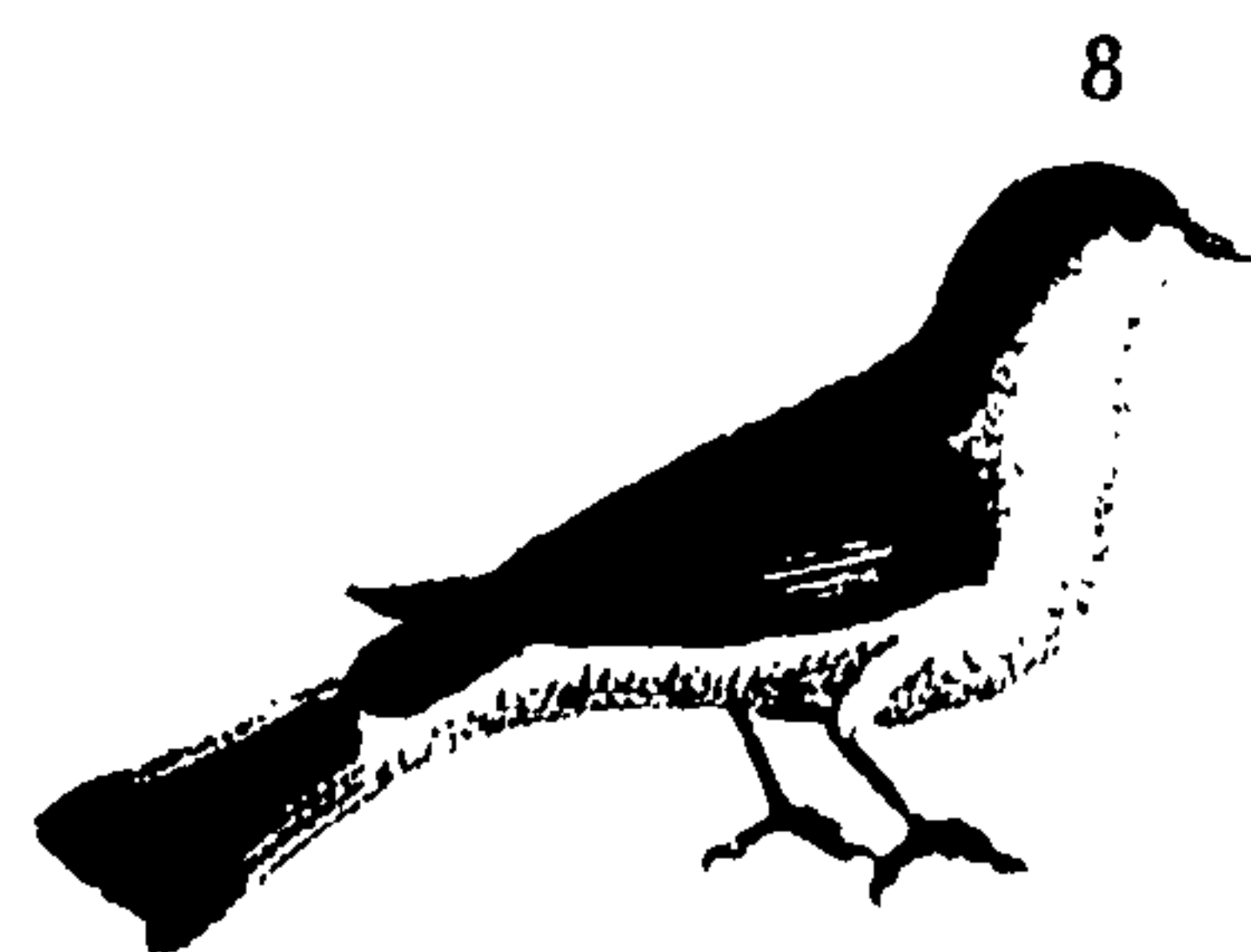
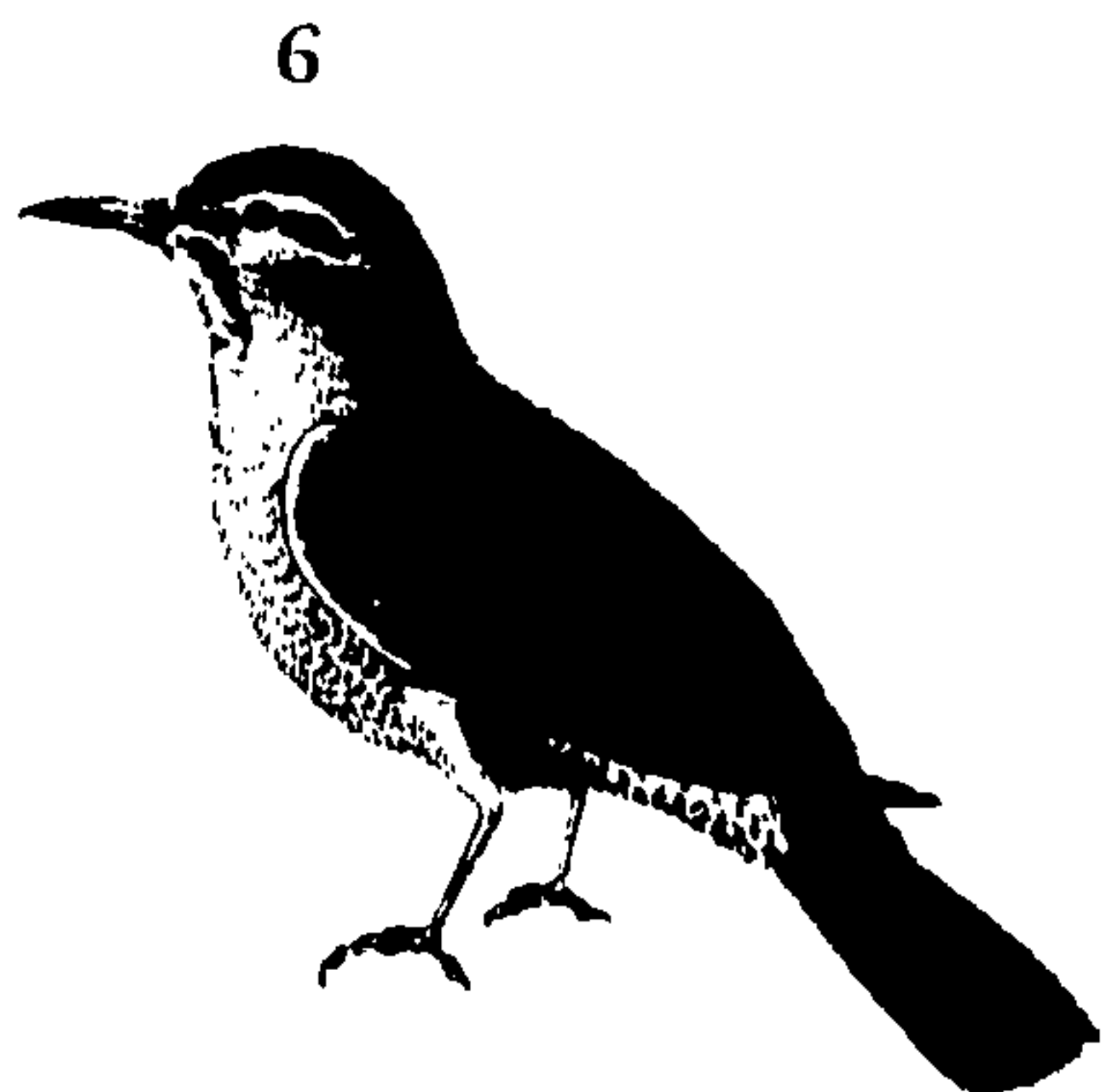
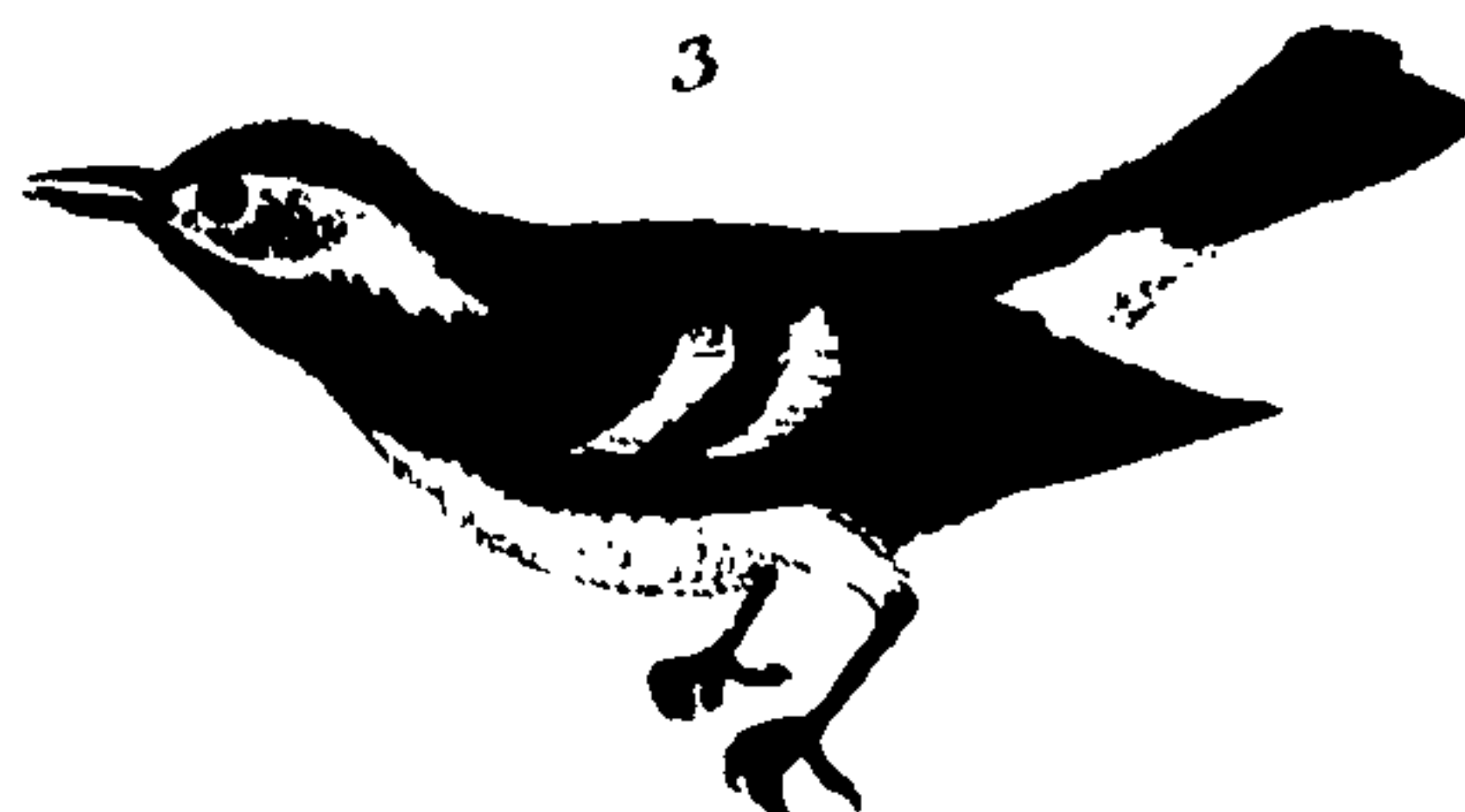
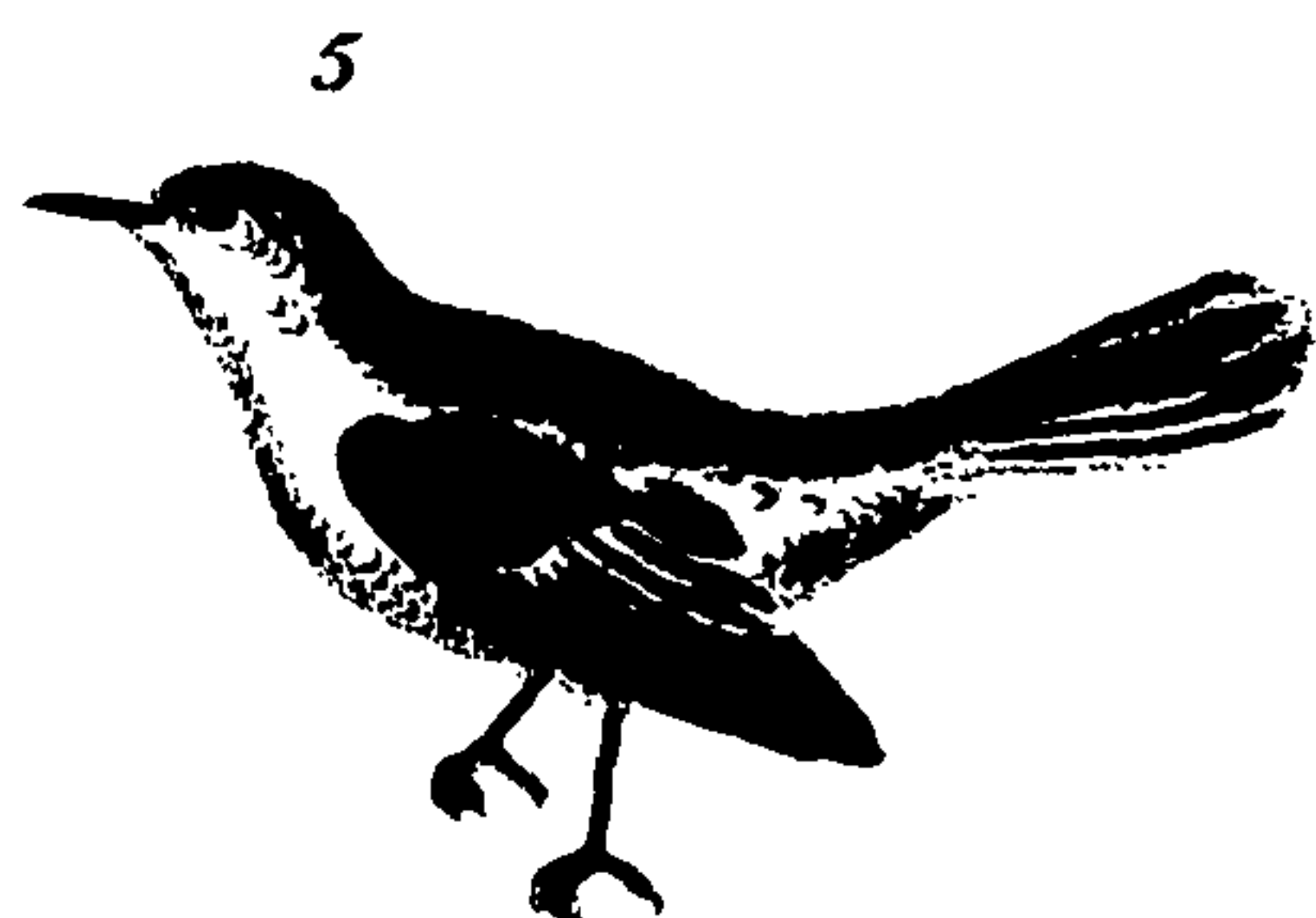
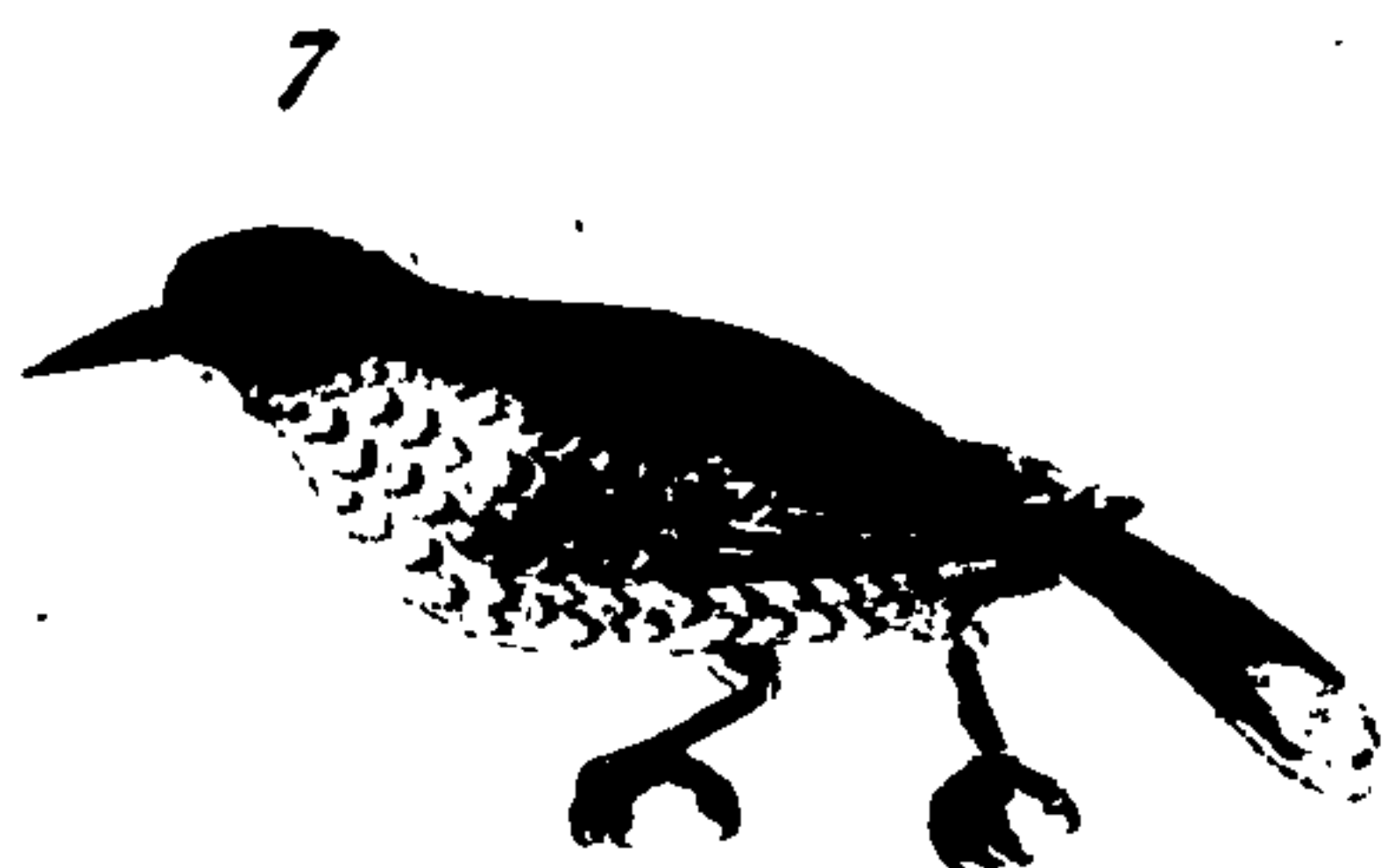
FLY-CATCHER, GREEN BLACK-CAP. This bird has a slender bill, of a moderate length, incurvated and sharp at the point, of a dusky colour above, and lighter below; both mandibles, however, being yellowish near their bases. The crown, sides, and hinder part of the head, are covered with a cap of black plumage, having an angle under each eye; the throat down to the bill, and the whole remaining part of the bird, are of one uniform blue-green colour, except the greater quills of the wings, which become blackish at their tips; and the legs and feet are of a dark lead-colour.

FLY-CATCHER, GREEN, BLUE-HEADED. This species is a native of Surinam; and the bill resembles that of the former bird, being of a light cinereous colour above, and dark below. The top and sides of the head are a light blue; part of the throat under the bill is white; the neck, the entire body, and the tail, are a yellowish green; on each side of the scapulars there is a roundish blue spot; the covert-feathers and quills resemble the colour of the body, except the greater quills, which are blackish; the under-side of the tail is dusky; and the legs and feet are of a faint yellow hue.

FLY-CATCHER, GREEN INDIAN. This species has a dusky bill, a little inclining to yellow near the head; the top of the head, the upper side of the neck, and the back, are of a dark green colour; the rump and upper coverts of the tail are a lighter green; and the sides of the head, the throat, breast, belly, thighs, and covert-feathers under the tail, are yellow clouded with green. The wings are dark brown, or black; a few of the quills are yellow on the edges of their webs; the first and second row of covert-feathers have white tips, which form two transverse bars on each wing; the tail is of the same colour as the back; and the legs, feet, and claws, are a dark brown or black. This bird is a native of Bengal in the East Indies, and was first described by Edwards.

FLY-CATCHER, OLIVE-COLOURED. This bird was first imported from Jamaica; where it is known, according to Dr. Browne, by the singular appellation of Whip-Tom-Kelly, which words it's note seems to express. The bill is slender, the point of the upper chap bending downwards, and hanging a little over the lower, of a dusky hue above, and inclining to a flesh-colour beneath. A dusky line runs from the bill towards the neck; the top of the head, the upper side of the neck, and the whole back, wings, and tail, are of a brownish green or dark olive-colour; and the entire under-side, from the bill to the covert-feathers beneath the tail, is of a whitish hue a little clouded with light olive. The inner coverts, and the ridges of the wings, are also whitish; but the insides of the quill-feathers of the wings, and the under-side of the tail, are cinereous. The legs and feet, which are similar to those of other small birds, are blackish or dusky.

FLY-CATCHER, YELLOW-RUMPED. The bill of this bird is slender, a little incurvated at the point, and of a dusky cinereous colour, but becoming lighter at the base. The top and sides of the head round the eyes are of a cinereous colour, which gradually becomes an olive green on the hinder part of the neck and back, where there are several blackish spots. The throat, breast, and



1. GOLDEN - WINGED FLY - CATCHER. 2. GREEN INDIAN FLY - CATCHER. 3. GREEN BLACK - THROATED FLY - CATCHER. 4. GREEN BLUE - HEADED FLY - CATCHER. 5. LITTLE BLUE - GREY FLY - CATCHER. 6. OLIVE - COLOURED FLY - CATCHER. 7. YELLOW - BREASTED FLY - CATCHER. 8. YELLOW - TAILED FLY - CATCHER. 9. YELLOW - VENTED FLY - CATCHER.

FLY

rump, are a bright yellow; but the breast is variegated with elegant black spots. The thighs, belly, and covert-feathers under the tail, are white; the wings are of a very dark ash-colour; the tips of the first and second rows of the covert-feathers are white, forming two oblique transverse bars on each wing; the quills next the back are also edged with white; and the covert-feathers within-side the wings are white. The insides of the quills are cinereous, with narrow edges of white on their inner webs; the tail-feathers, except the two middlemost, which are black, have the central parts of their inner webs white, their tops and bottoms being blackish. The covert-feathers on the upper side of the tail are of a deep dusky colour; and the legs and feet are also dusky. This bird is a native of Pennsylvania, and is also probably found in several of the neighbouring provinces.

FLY-CATCHER, YELLOW-TAILED. This bird has a brown bill, somewhat compressed like that of the duck; about the angles of the mouth several hairs project forwards on each side of the bill; the top of the head, and the covert-feathers above the tail, are cinereous; the hinder part of the neck, the back, and the covert-feathers of the wings, are an olive-green; and the quill-feathers are a dusky brown, or blackish with an olive cast. The covert-feathers within-side the wings are a yellowish white; and the tail-feathers are yellow with dirty brown tips, except the two middle ones, which are entirely a dark brown. The whole under-side, from the bill to the tail, is whitish with faint shades of reddish brown on the sides of the breast; the sides under the wings are yellow; and the legs and feet are a dusky brown.

FLY-CATCHER, YELLOW-SPOTTED. The bill of this bird is of a dark brown or dusky colour; the top of the head, the hinder part of the neck, the back, wings, and tail, are a dark greenish olive; the greater feathers of the wings and tail are more dusky; and the inner webs of the side tail-feathers are white half their lengths from the tips; the second row of covert-feathers of the wings have white tips, and these form a white spot on the upper part of each wing. The throat, breast, sides, and inner coverts of the wings, are yellow, with small black spots down the middles of the feathers; the belly and thighs are a fainter yellow without any spots; and lines of yellow pass from the bill over each eye. The covert-feathers beneath the tail are white; and the legs and feet are a dusky brown. This bird, together with the preceding, are natives of the West Indies.

FLY-CATCHER, GOLDEN-CROWNED. This bird has a slender bill of a blackish or dusky colour; from which a broad black list crosses the eye, and extends backwards; and above it there is a narrow black line. The sides of the head, and the throat beneath the black list, are white; the hinder parts of the head and neck, and the back and covert-feathers above the tail, are blueish, with dusky spots down the centres of the plumage. The upper part of the breast is black with a small admixture of grey; on the crown of the head there is a spot of bright yellow; and the sides of the breast below the black bar, and the rump, are of the same beautiful colour. The wings are dusky, with grey edges; the tail, which is composed of twelve feathers, is dusky or blackish; the belly, thighs, and covert-feathers under the tail, are white spotted with black; and the legs, feet, and claws, are dusky. This species is a native of Pennsylvania.

FLY

FLY-CATCHER, GOLDEN-WINGED. The bill of this bird is straight, sharp-pointed, and black; from the angle of the mouth a broad black list passes through the eye; and above and below there are white lines. The throat is black; the breast, belly, thighs, and covert-feathers beneath the tail, are white; the top of the head is a bright yellow; and the upper side of the neck, the back, the rump, and the lesser coverts of the wings, are a light blueish slate-colour; the quills and the upper side of the tail are a dark cinereous; the exterior webs of the first row of outer feathers of the wings are yellow, as well as the tips of the feathers next above these, which, when united, form a spot of bright yellow on each wing. The interior coverts of the wings are white; the under-side of the tail is ash-coloured; and the legs and feet are dusky.

FLY-CATCHER, GREEN, BLACK-THROATED. This bird has a slender bill, sharp-pointed, and black; the sides of the head and part of the neck are a fine bright yellow; the throat is black; and the crown of the head, the neck, back, rump, and lesser coverts of the wings, are of a green olive colour. The wings and tail are a dark cinereous, except the tips of some of the wing-feathers, which are white; the breast is yellowish; the belly, thighs, and coverts beneath the tail, are white; and the legs and feet are dusky. This species is a bird of passage in Pennsylvania.

FLY-CATCHER, RED-THROATED. This bird has a slender black bill; the crown of the head is yellow; and a black mark passes from the angle of the bill under the eye. The hind part of the head is black; the sides of the head, part of the throat, the belly, thighs, and covert-feathers under the tail, are white; the lower part of the throat is of a dark reddish hue, which colour divides and passes under each wing; the back, rump, and upper sides of the wings, are dusky, bordered with a lightish green colour, except the two principal rows of covert-feathers of the wings, which are deeply tipped with white, forming two light bars across each wing. The covert-feathers within-side the wings are white; the tail is blackish on its upper side; and the legs and feet are black.

FLY-CATCHER, LITTLE BLUE GREY, OF EDWARDS. The bill of this bird is black, except the lower mandible, which is reddish at the base; the top and sides of the head, the upper side of the neck, the back, rump, and upper side of the tail, are all of a blueish slate-colour; from the nostrils a black arched mark passes over the eye to the hinder part of the head; the wings are externally of a brownish ash-colour, longitudinally marked with white; the two exterior feathers on each side of the tail are white; the whole under-side, from the bill to the tail, is of the same colour; and the legs and feet are black. This bird is a native of the United States of America.

FLY-CATCHER, YELLOW-VINTED. This species, which is a native of the island of Java, has a black bill, and a black front and crest. The neck, the sides of the breast, and the belly, are white; the back and wings are brown; the coverts of the tail are white; the vent is yellow; the tail is long, dusky, and barred near the extremity with white, and the legs are dusky.

FLY-CATCHER, YELLOW-BREADED. This bird, which is about the size of the gold-finch, inhabits the island of Ceylon, where it is much admired for the sweetness of its note. The bill is grey, the head and cheeks are black; the back and coverts

verts of the wings are a cinereous brown dashed with a pale yellow; the primaries and the tail are dusky edged with a pale yellow; the breast and belly are a fine light yellow; and the legs are a pale blue.

FLY-CATCHER, BLACK AND WHITE. This species has a straight bill, slender, sharp-pointed, and black. Round the basis of the upper mandible are a few black hairs pointing forwards; the forehead, and the spaces round the eyes, are white; and the entire under-side, from the bill to the coverts of the tail, is of the same colour. The top of the head, the upper side of the neck, the back, wings, and tail, are black, except that the tips of the tail-feathers are white. The rump, and the coverts on the upper side of the tail, are white, with a small admixture of brown; and the legs and feet are black. This bird was imported from Surinam.

FLY-EATER. The name of a West Indian species of lizard about the length and thickness of a man's finger. The males are green; and the females are grey, and inferior in size to the males. They feed on flies, which they pursue with so much eagerness, that they frequently leap from the tops of trees in pursuit of them. In patient expectation of seeing their prey, they sometimes lie still for twelve hours or more successively, till a favourable opportunity presents itself of gaining their aim, when they leap on the insects, and swallow them up in an instant.

These lizards are so numerous in some of the Leeward Islands, that there is scarcely a tree to be found which does not contain some of them; and even the houses of the natives are extremely infested by them.

FLYING CAT. A large species of bat found in the East Indies. See CAT, FLYING.

FLYING DOG. An animal of the bat kind found in the island of Ternate, so called from it's supposed resemblance to the dog. The fore-feet are very long, and furnished with five toes, which assist the creature in extending it's wings; the fifth toe, which is distinct from the rest, resembles a man's thumb, and is armed with a sharp crooked claw, with which the animal can suspend itself at pleasure. The hind-feet likewise have five toes, armed with crooked sharp claws; and it has no tail.

In New Spain, there is another creature of the bat kind known by the same appellation; but the description given of it by naturalists is so incomplete, that it is impossible to determine with what species of bat it corresponds.

FLYING FISH; the *Exocoetus Volitans* of Linnaeus. This fish, which is also called the adonis, hirundo, and mugil alatus, in the form of it's body resembles the herring, but the back is flat; the scales are large and silvery; the dorsal fin is small, and placed near the tail; the pectoral fins, the instruments of flight, are almost as long as the body; the tail is bifurcated; the belly is white; and the upper surfaces of the wings are of an olive-colour beautifully spotted near their edges with blue. This fish is common in the Mediterranean and some other seas; but is seldom found in the British, or in any of the northern seas. It leads a most wretched life in it's native element, being perpetually harrassed by the dorados, and other fish of prey; and, if it endeavours to avoid them by having recourse to the air, it either meets it's fate from the gull or the albatross, or sinks down again into the mouths of the finny race which

watch it's aerial excursion below. Whole shoals of these creatures frequently fall on board those ships which navigate the seas of warm climates; and hence it is apparent, that nature has supplied them with instruments which frequently bring on that destruction they strive to avoid, by having recourse to an element which they cannot long enjoy.

It appears that the ancients were acquainted with this species. Pliny mentions it under the name of hirundo, and speaks of it's flying faculty; and it is probable that Oppian intended the same by his okeiai chelidones, or the swift swallow-fish. What Athenæus and the last-cited author mean by the exokoitos and adonis, is not so clear: they assert that it quits the water, and sleeps on rocks, from whence it tumbles with precipitation when disturbed by unfriendly birds; and on these accounts ichthyologists seem to have made it synonymous with the Flying-Fish.

FLYING-FISH is also an appellation given to a fish of the gurnard kind. See GURNARD.

FOAL. The young of the horse kind. Among dealers, the word Colt is generally applied to express the male kind, and Filly the female. See HORSE.

FOETUS. The child, while yet contained in the mother's womb; but particularly after it is perfectly formed; till which time it is more properly denominated an embryo.

FONG-WHANG. The Chinese appellation for a very beautiful bird peculiar to that country; which, if we may give credit to the natives, is the most elegant of all the feathered tribe: but as no European has hitherto had an opportunity of describing it's real nature, qualities, colours, and proportions, we forbear to publish exaggerated, and perhaps fabulous accounts.

FORDICH TROUT. This fish, which is almost as large as the salmon, continues nearly nine months of the year in the sea; and hence we may naturally infer, that it is of a different species from the common trout. Besides this, it is seldom caught with an angle in fresh water; nevertheless, it's return to the rivers it frequents is so very constant and uniform, that fishermen can almost fix on a certain day when it may be expected. This fish, though generally called a trout, is, perhaps, more properly a variety of the grayling. See GRAYLING.

FORFICULA. See EARWIG.

FORFICULA MARINA; the Sea Earwig. An insect frequently found near the sea-shore, having some degree of external resemblance to the common earwig, particularly in it's size. The colour is an admixture of deep black and silvery white, the shoulders are somewhat gibbous, the eyes stand close to each other on the summit of the head; and the antennæ are long and slender. It has eight pair of legs on the anterior part of the body, and eight pair more on the hinder part, with three or four bristles at the tail. This animalcule lives among rocks and stones, and moves with prodigious swiftness.

FORK-BEARD. An appellation sometimes given to the forked lake. See LAKE.

FORK-TAIL FISH. This fish, which is caught in the oriental seas, has a long round body, and a very long forked-tail, from whence it receives it's name. It's head resembles that of the herring, on it's top there is a long barb or bristle; and below the mouth there are two more, which

F O S

the animal keeps close to the body when in the act of swimming. It grows to the size of the mackerel; but its flesh is not much esteemed.

FORK-TAIL, among fishermen, is also expressive of the salmon in its fourth year, while it has not yet attained its full growth.

FORMICA. See **ANT**.

FORMICA LEO; the Ant-Lion. A remarkable insect which, in its prior or creeping state, shews amazing address in catching its prey; and, in its perfect or winged state, approaches to the nature of the libellulæ or dragon-flies. See **ANT-LION** and **DRAGON-FLY**.

FORNA. An appellation given by Hildegard and others to the trout.

FOSSANE. An animal of the weasel kind, about the size of the cat. Its body, which is slender, is covered with ash-coloured hair mixed with tawny; four black lines extend from the hinder part of the head towards the back and shoulders; the shoulders, sides, and thighs, are black; the whole under-side of the body is of a dirty white hue; and the tail is semi-annulated.

This animal, which inhabits Madagascar, Guinea, Cochin-China, and the Philippine Isles, is fierce and untractable; it destroys poultry in abundance; and its flesh, when young, is reckoned excellent food. The natives of Guinea call it the barbe; and the Europeans who frequent that coast, the wine-bibber, on account of the fondness it shews for palm-wine.

FOSSANE, LEVERIAN. This variety has a white spot on each side of the nose, and another beneath each eye; the remainder of the nose, the cheeks, and the throat, are black; the ears are very large, upright, rounded, thin, naked, and black; the forehead, the sides, thighs, rump, and upper part of the legs, are cinereous; the back contains many long black hairs; and on the shoulders, sides, and rump, are dispersed some black spots. The tail, towards the end, is black, but near the base, mixed with tawny slightly annulated with black; and the feet and claws are white.

This species is of the size of the genet, to which it bears a strong resemblance; and its tail is as long as its whole body.

FOSSANE, OF BROOKS. This species has a grey nose, marked with a little brown; the mouth and jaws are white, with a dark brown spot on each side; the eyes resemble those of the cat; and the ears are rounded, and of a fleshy colour. The head is grey mixed with tawny; and the forehead is marked with a brown line. The body is likewise grey and tawny, having a dark brown line along the ridge of the back reaching to the tail; and the sides are grey, adorned with lines of very dark brown olive spots. The belly and feet are white; and the tail is long and grey, with blackish or dark brown rings.

FOSSORIES. A species of small worms hatched from the eggs of flies which feed on the parenchymatous substance of the leaves of plants, burying themselves between the two membranes. Reaumur gives these animals in general the name of ascarides; but as they greatly differ in their size, and in the manner of their eating and destroying the leaves, the small ones, which eat but slowly, and crawl their way in crooked furrows, are distinguished by the appellation of *Fossories parvi*; and, on the contrary, those which are larger and more voracious in their way of living, are called *Fossories*.

F O X

FOUMART. A provincial appellation for an animal of the weasel kind, called also the fitchet and pole-cat. See **POLE-CAT**.

FOURMILLIER. A name given by Buffon to the myrmecophaga didactyla of Linnæus, or the little ant-eater, the lesser yellowish tamandua, or the white American coati. This animal has a conic nose, bending a little downwards; small ears hid in the fur; two hooked claws on the fore-feet, and four on the hind. The head, body, limbs, and upper part and sides of the tail, are covered with long, soft, silky hairs, of a yellowish brown colour; and the tail is thick at the base, and tapers to a point. This animal inhabits Guiana, and climbs trees in search of those ants which build their nests in the branches. See **ANT-EATER**.

FOWL. This term, when taken in a general sense, is of similar import with Bird; but, in a limited view, it more peculiarly signifies the larger kinds of birds, both wild and domestic, which are either reared or pursued for the purposes of food. In this sense, Fowl includes turkies, geese, ducks, pheasants, partridges, pigeons, cocks and hens, and a variety of other birds. Our common poultry were originally brought from India and Persia. Aristophanes calls the cock the Persian bird; and says, that it was known in that country before Darius and Megabyzus. These birds are now found wild in the isle of Tinian, and other islands of the Indian Ocean; and in this state their plumage is black and yellow, and their combs and wattles purple and yellow. They were certainly denizens of Britain before the arrival of the Romans; for Cæsar informs us, that they were one of the sorts of food forbidden to the natives. It seems probable that the Phœnicians, who traded to Britain about five hundred years before Christ, first introduced them into this country. As to the other domestic Fowls, (turkies, geese, and ducks, excepted) we seem to be indebted for them to the Romans; but the Wild-Fowl were our own from the earliest periods.

FOX. An animal of the dog kind, which it exactly resembles in its internal conformation. It is a crafty, lively, and libidinous creature; breeding only once a year, unless some accident deprives it of its first litter; and generally producing four or five cubs, which, like puppies, are brought forth blind. The female goes with young about six weeks; and though it is a generally received opinion that this animal will not generate with the dog kind, late experiments and observations have proved it to be an erroneous one. Buffon indeed was unsuccessful in attempting to bring about an union of the two species; but what failed when pursued on mechanical principles, has frequently been effected by nature.

The Fox is smaller and more slender than the wolf, though its general conformation is the same: the former is about two feet three inches long, and the latter three feet and a half. The tail of the Fox is longer in proportion, and more bushy; its nose is smaller, bearing a stronger resemblance to that of the grey-hound; and its hair is softer; but its eyes, like those of the wolf, are obliquely placed; its ears have a similar direction, and, in proportion to its size, its head is equally large. From the dog this animal differs in a more essential manner: its strong, offensive smell, is peculiar to the species; its habits and pursuits are by no means correspondent with those of the dog; and, though marked with few internal variations, and fewer ex-

FOX

ternal ones, the kinds are extremely distinct, though no description can give the just discriminations.

The Fox has ever been famous for his cunning and artifices; and he in a great measure merits the reputation he has acquired. Without attempting to oppose either the dogs or the shepherds, without attacking the flock, or alarming the village, he finds an easier way of subsistence, and gains by address what is denied to his strength or courage. Prudent, patient, and vigilant, he waits the opportunity of depredation, and varies his conduct on every occasion. Self-preservation seems to be his actuating principle; for, though nearly as indefatigable, and actually more swift, than the wolf, he does not entirely rely on either, but forms himself an asylum, to which he may retire in case of necessity, where he shelters himself from danger, and rears his young.

It is almost invariably true that, among the human race, those who lead a domestic life are more civilized, and more endowed with wisdom, than such as wander from place to place: thus, among the inferior ranks of animated nature, we may suppose that those who take possession of an home, possess a superior degree of instinct. The choice of situation, the art of making it convenient, of concealing its entrance, and securing it against more powerful animals, are all so many indications of industry and sagacity. The Fox possesses all these qualities in an eminent degree, and turns them to his advantage. He generally keeps his kennel at the edge of a wood, and yet within an easy journey of some farm-house or cottage: from thence he listens to the crowing of the cock, and the cackling of the domestic fowls; he scents them at a distance; he seizes his opportunity, conceals his approaches, creeps sily along, attacks his prey, and seldom returns without his booty. If he gets into the farm-yard unmolested, he begins to level all the poultry without remorse; and, carrying off a part of the spoil, hides it at some convenient distance, and then returns to the charge. In this manner, he brings them one by one, and thrusts them into the earth with his nose; and afterwards, at his leisure, he hides them more compleatly, by covering them with loose earth; in which condition they remain till the calls of hunger stimulate him to pay them another visit. The same arts are practised by him when he finds birds entangled in springes laid for them by the fowler; he very expertly liberates them from the snares, hides them for a few days, and knows exactly when and where to avail himself of this buried treasure. He is equally alert in seizing young hares and rabbits, before they have sufficient strength to escape from him; and, when the old ones are wounded and fatigued, he seldom fails to discover them in their moments of distress, and to render them his prey. He likewise searches out for birds nests; seizes the partridge and the quail while sitting; and destroys a large quantity of game. The wolf, indeed, is the most injurious to the peasant; but the Fox to the gentleman. In short, nothing which can be eaten seems to come amiss to him; rats, mice, serpents, toads, and lizards, all become the prey of this unfeeling glutton. When urged by hunger, he will even feed on vegetables and insects; and those Foxes which live near the sea-coasts, for want of more desirable food, will eat crabs, shrimps, and shell-fish. In vain does the poor hedge-hog roll itself up in a ball, to oppose him; this determined plunderer never desists from teaz-

FOX

ing the poor animal, till it is obliged to extend itself, when he instantly devours it. Wasps and wild bees are attacked with equal success: though at first they fly out on their invader, and actually oblige him to retire, their triumph is but short; for the Fox, rolling himself on the ground, crushes such as stick to his skin; and then returning to the charge, by unremitted perseverance, and a repetition of the same expedient, he obliges them to abandon their combs, and then eagerly devours both wax and honey.

The chase of the Fox is more pleasant and amusing, and requires less preparation, than that of the wolf. As dogs have a natural repugnance to pursue the wolf, so they are equally alert in the chase of the Fox, preferring it even to the hare or the buck. The instant the Fox perceives himself pursued, he makes for his kennel, and takes refuge at its bottom, where for a short time he loses the cry of his enemies; but the whole pack soon reaching its mouth, redouble their vehemence and rage; and the little tarrier, which is usually an associate in the chase, boldly ventures in. It frequently happens that the kennel is formed under a rock, or among the roots of old trees; and in such cases the Fox cannot be dug out, nor is the tarrier able to contend with him at the bottom of his hole. By this prudent selection of situation, he generally remains secure; but as this choice is rather accidental than intended, he is commonly dug out; and then the hunters usually carry him in a bag to some open country, and there liberate him before the expectant hounds. The hounds and the hunters eagerly pursue; the former from an innate principle, and the latter under the impulse of a temporary frenzy, which agitates the body, and prevents the mind from making any reflection on the futility of the pursuit. What adds to this entertainment, is the strong scent the Fox leaves, which always keeps the hounds in full cry; but though his scent is much stronger than that of the hare, it is much sooner evaporated. His various shifts to escape, when every retreat is cut off to his kennel, are ingenious and surprizing: he always chooses the most sylvan shades, and pursues those paths which are entangled with thorns and briars; he does not double, nor adopt any of the unavailing efforts of the hare; but flies in a direct line before the hounds, where the scent is less liable to remain; and, at last, when overtaken, he defends himself with desperate obstinacy, and fights with silent courage to the very last gasp.

The first year, the Fox is called a cub; the second, a Fox; and the third, an old Fox. He is eighteen months, or two years old, before he arrives at his full size and perfection; and, if unmolested, will live from twelve to fourteen years.

As the Fox is inimical to all other animals, so the various tribes of nature, which in any degree possess his strength, are at variance with him. The dog, as already observed, hunts him with peculiar acrimony; and the wolf, which is a still more potent and necessitous enemy, pursues him to his very retreat. Some authors gravely inform us, that the Fox, in order to keep the wolf at a distance, lays at the mouth of his kennel a certain herb, to which the other has a particular aversion. This fabulous story, however, at least implies, that these two animals are as inimical to each other as they are to all the rest of animated nature.

But the Fox is not hunted by quadrupeds alone: for those birds which know him to be their im-

placable

FOX

placable enemy, attend him in his excursions, and give each other warning of his approach. The daw, the magpie, and the blackbird, conduct him along, perching on the hedges as he creeps below, and by their cries and notes of hostility apprise other animals of their danger; a caution which they perfectly understand, and immediately put in practice. Even the hunters themselves are often informed by those birds of the place of his retreat; and accordingly send their dogs into those thickets where they are particularly noisy and querulous. Thus is it the fate of this petty plunderer to be detested by every rank of animals; all the weaker classes shun him, while all the stronger ones pursue him.

Among the various tribes of wild animals, none are more subject to the influence of climate than Foxes; and there are found almost as many varieties in this kind as in any of the domestic animals. The generality of Foxes, it is well known, are red; but there are some of a greyish cast; and Buffon asserts, that the tip of the tail in all the Fox tribe is white, though this peculiarity certainly does not always exist in this country. In Great Britain we only meet with three varieties of this animal; and these are rather established on a diversity of size than of colour or form. The greyhound Fox, which is the largest, tallest, and boldest, will attack a full-grown sheep; the mastiff Fox is less, but more strongly built; and the cur Fox, which lurks about hedges and out-houses, is the smallest, and most common, as well as the most destructive of the three to peasants and farmers.

In the hyperborean regions, Foxes are found of all colours; black, blue, grey, iron-grey, silver-grey, white, white with red legs, white with a black head, white with a black tip to the tail, red with the throat and belly entirely white, and sometimes with a stripe of black running along the back, and another crossing it at the shoulders. The common kind, however, is more universally diffused than any of the former; being found in Europe, in the temperate climates of Asia, and also in America; but they are very rare in Africa, and in the countries lying under the torrid zone. The furs of some of the foreign Foxes are peculiarly esteemed: the skins of blue Foxes are very scarce and valuable; but, of all others, those of black Foxes are most esteemed, one of which often sells for forty or fifty crowns. The hair of these animals is so disposed, that it is impossible to tell which way the grain lies; for if the skin is held by the head, the hair falls towards the tail; and, if it is held by the tail, it hangs down equally smooth and even to the head.

FOX, COMMON. This species has a sharp nose; lively hazel-coloured eyes; sharp, erect ears; and a long, straight, bushy tail, tipped with white. The body is a tawny red, mixed with ash-colour; and the fore-part of the legs is black. But the creature is subject to considerable variations in colour: its voice is a kind of yelp, and not a bark; and its bite, like that of the wolf, is very severe and dangerous.

FOX, CROSS. This variety has a black line passing transversely from shoulder to shoulder, and another along the back to the tail. Cross Foxes inhabit the most frigid climates of Europe, Asia, and North America: their furs are thicker and softer than those of the common sort; and great numbers of their skins are imported from Canada.

FOX, BLACK. This creature is the most cunning, as well as most valuable, of all the vulpine

FOX

tribe. Its skin is more highly esteemed in Russia than the finest fables. It inhabits the northern parts of Asia and North America; but those skins which are imported from the latter, are of an inferior quality.

FOX, BRANT. Gesner and Linnæus describe this Fox as being of a fiery redness: the former calls it brand-fuchs; and the latter, brandraef. One of these animals, which was kept in an English menagery, was scarcely half the size of the common Fox; the nose was black, and much sharper; the space round the eyes was ferruginous; the forehead, back, shoulders, sides, and thighs, were mixed with red, ash-colour, and black, the ash-colour being predominant; the belly was yellowish; and the tail was black above, red beneath, and cinereous on the sides. This creature was imported from Pennsylvania; and appears to be allied to the karagan, a small species very common in all parts of Great Tartary.

FOX, CORSAK. This animal, which inhabits the deserts beyond the Yaik, and from the Don to the Amur, lives in holes, howls, barks, and burrows deep. Forty or fifty thousand of these creatures are generally caught by the natives of those countries yearly, by means of falcons and greyhounds; and their skins are sold to the Russians, at the rate of forty kopeiks, or twenty-pence sterling, each. They likewise export considerable numbers of their skins into Turkey, using them instead of money.

This species has upright ears, soft downy hair, a bushy tail as long as the whole body, a white throat, and yellowish green irides. In summer, its colour is a pale tawny; and, in winter, grey. The base and tip of the tail is black; and the other parts are cinereous. This small species is confounded by Buffon with the arctic Fox.

FOX, ARCTIC. The hair of this species is softer than that of the common Fox; and the tail is shorter and more bushy. Some of these animals are blue; and others are white at one season of the year, and greyish and brown at another. The hair is much longer in winter than in summer, as is usual with respect to those animals which inhabit cold climates. The nose is sharp; the ears are short, rounded, and almost hid in the fur; the legs are short; and the toes are entirely covered with fur, like those of the hare.

The Arctic Fox is very common in all the northern countries bordering on the Icy Sea, and is seldom seen in more propitious climates. It is principally found in the mountainous and barren regions of Norway, Siberia, and Lapland, where it burrows under ground, and throws the bottom of its kennel with moss. In Greenland and Spitzbergen, it lives in the cliffs of rocks, being prevented from burrowing by the insuperable barrier of frost; and two or three pair generally inhabit the same hole. About Ladyday they copulate, during which time they continue in the open air; after which they take to their holes, and go with young nine weeks. Like dogs, they continue united in the act of copulation, and bark like these animals; for which reasons the Russians call them pefzti. They possess all the cunning of the common Fox; prey indiscriminately on the young of all aquatic fowls before they can fly; on grouse and hares, and even on the eggs of birds. In Greenland, they are compelled by necessity to subsist on berries, shell fish, or any food which the sea casts forth; but then principally food in the north.

FOX

north of Asia, and in Lapland, is the leming. Those of the last-mentioned countries are extremely migratory, pursuing the leming, a very wandering and destructive animal, which makes its appearance in certain countries once in the space of several years. On these occasions the Arctic Fox deserts its usual haunts for three or four years successively, and returns again when its prey begins to fail. The skins of this kind of Foxes are but of small value.

FOX, ANTARCTIC. This species, which is a native of the Falkland Isles, near the extremity of South America, has short-pointed ears, and hazel-coloured irides. The head and body are of a cinereous brown hue, the hair being more woolly than that of the common Fox; the legs are dashed with rust-colour; and the tail is dusky tipped with white. This animal, which is about one-third larger than the common Fox, has much the appearance of the wolf in its ears, tail, and the strength of its limbs; for which reasons the French call it *loup renard*, or the wolf Fox.

The Antarctic Fox is the only land animal of these remote isles. It lives in the vicinity of the sea-shores; kennels like the common Fox; and forms regular paths from one bay to another, probably for the convenience of surprizing water-fowl, on which it subsists. It becomes very meagre at certain seasons for want of prey, is very tame, emits a most foetid smell, and barks like the dog.

FOX, GREY. The nose of this creature is sharp; the ears are long, sharp, and upright; the legs are long; and the whole body is of a grey colour, except a little redness about the ears. This species, which inhabits Carolina and the warmer North American climates, differs from the arctic Fox in shape, and in the nature of its habitation. It agrees with the common Fox in the first; but varies from it in the last, never burrowing, but living in hollow trees. The sportsman receives no diversion from the chase of this animal; for it speedily takes to its retreat, whence it is impossible to dislodge it. Unlike the species in general, it has no strong foetid smell. It is easily domesticated when caught young; and its skin, when in proper season, is very convenient for the manufacture of muffs.

FOX, SILVERY. This species, which resembles the common Fox in shape, abounds in the woody eminences of Louisiana, where there is abundance of game, with which it supplies all its wants. It is a very beautiful creature; the short hairs covering its body are of a deep brown colour; and over them spring long silvery hairs, which give it a very elegant appearance.

FOX, BARBARY. This animal, the Chacal of Buffon, has a long slender nose, sharp upright ears, and a long bushy tail. It is about the size of the common Fox; but its limbs are shorter, and its nose is more slender. The body is of a pale brown colour; the space above and below the eyes is black; from behind each ear proceeds a black line, which soon dividing into two, extend to the lower part of the neck; and the tail is surrounded with three broad rings.

FOX, MACASSAR. This creature receives its name from the island where it is principally found. The tail is exceedingly long and bushy; the ears are short; the feet are flat, and furnished with long claws not much unlike those of the bear or monkey; and the whole body is of a cinereous colour.

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FOX, SEA. A large fish, distinguished in the Artedian system by the name of the *Squalus* with a tail longer than the body. Many authors affirm that it has the rank smell of the Fox, and that its flesh is extremely ill-tasted: but, on a strict investigation of the subject, this does not appear to be founded in truth; for its smell differs very little from that of other fishes; and its flesh is far from being disagreeable. Hence it will appear, that these unfavourable qualities have been attributed to it in order to strengthen its resemblance to the Fox; a name which only the length of its tail seems to render applicable; and even though the tail is very long for a fish of this kind, it can scarcely be said to resemble that of the Fox.

This fish is about nine feet long, and sometimes thirteen or fourteen; and its breadth, where largest, is about fourteen inches. The tail is nearly as long as the whole body besides, and is bent downwards in the shape of a scythe. Near the origin of the tail, there is a single fin below; and the spine being extremely flexible in this part, the tail is by this means easily elevated or depressed. On the back there are two eminences, a large one near the middle, and a smaller near the tail. There are three fins on each side; the pair next the head are large, and resemble the wings of a bird; but the others are smaller. The skin is smooth, and without scales; and the fins and eminences on the back are composed of a sort of ribs, united by a strong, tough membrane. The tongue, which is inseparably annexed to the lower jaw, is composed of a great number of bones articulated together by a fleshy substance of a fibrous texture; and covered with a membrane, in which are several prominences that appear as pellucid as the finest crystal when viewed by the help of a microscope. The throat and stomach are remarkably large; and some authors inform us, that the creature, when affrighted, will swallow its young ones, and afterwards vomit them up again when the danger is past: others, who expatiate on its cunning, tell us, that when it has swallowed a bait affixed to a hook, it will take in the whole line, till it comes to a weak place, where it can bite it asunder. But these tales seem only calculated to keep up the resemblance between it and the Fox with respect to craftiness; for they but ill apply to this fish, which has no teeth that can assist it in biting with effect, though it has three rows of them. The head seems a mere lump of flesh, being covered with muscles, of which some are four inches thick; the skull, which is no bigger than a man's fist, is very thick, and divided into three cavities, each of which contains a small quantity of mucous matter mixed with blood; so that the fish seems to be almost destitute of brains. The eyes are as large as those of the ox, and of an hemispheric figure, being flat before, which gives them a very singular appearance; the back is of an ash-colour; and the belly is white.

The Sea Fox is commonly caught in the Mediterranean, where it feeds on other fishes and marine plants. It has also been sometimes taken in the British seas; and is supposed to be the fish called the flusker, from its attacking and beating the grampus with its long tail when it rises to the surface of the water for the benefit of the air.

FOX, TAILED MONKEY. Another appellation for the taki, or cagui, so called from the remarkable length and hairnets of its tail.

FRANCOLIN. A delicious bird of the partridge.

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tridge genus, to which some authors have given the name of *attagen*, though they seem to constitute two distinct species. The *Francolin*, properly so called, is a native of the East Indies, and some islands of the Archipelago. It is somewhat larger than the common partridge; and each of the wings, when closed, is six inches long. The bill, which is about an inch long, is black, and shaped much like that of the common hen; and the tongue and inside of the mouth are of an hazel colour. The irides are also hazel-coloured; and the head is covered with black feathers, except that there is a white spot under each eye, and a small admixture of red on the crown, with a few small spots of white which proceed from the part above the eyes, and join on the hinder part of the head. The feathers, all round the neck, are of a reddish orange-colour speckled with small round spots behind between the neck and back; the belly and breast are black; but there are regular round white spots on the sides: there are also white spots on the belly and thighs, but these are more broken, and mixed with a little reddish colour. The covert-feathers under the tail are entirely a reddish orange; the plumage of the back is black and brownish; and the feathers on the sides of the back, which fall partly over the wings, have the black and brown indented into each other. The wings are dusky, and regularly marked with round, light brownish spots; and the insides of the wings are of the same colour, except that the spots are more broken, and run in transverse lines. The lower part of the back and the rump are covered with variegated plumage, black and white in narrow transverse lines; the tail-feathers are marked in the same manner, except the tips, which, for an inch in breadth, are wholly black; the legs and feet are overspread with red scales; and three of the four toes are connected near their bottoms by membranes. The claws are of a horn colour; and the legs of the male are furnished with spurs.

FREGAROLA. A name given by some writers to the small river-fish well known in England by that of the minnow.

FREGGIA. A long anguilliform fish of the *tenia* kind, more commonly called *cavarrigo*.

FRINGILLA. The name of a large genus of birds of the general order of *passeres*, in the Linnæan system of zoology. The distinguishing characters of this genus are, that the tongue is whole and even; the beak is of a conic, straight, sharp-pointed figure; and one mandible receives the other into the sinus of it's basis. Of this genus are the chaffinch, goldfinch, linnet, sparrow, &c.

FRINGILLAGO. An appellation given by some naturalists to the whole genus of the titmouse; while others have restrained it to that particular species commonly known in England by the name of the ox-eye. This bird is considerably larger than any of the genus, weighing nearly an ounce; whereas the others seldom exceed three drams. The head and throat are black; the cheeks are white; the back is green; the belly is of a yellowish green hue, divided in the middle by a band of black which extends to the vent; and the rump is of a blueish grey colour. The quill-feathers are dusky, edged with blue and white; the coverts are blue, the greater being tipped with white; the exterior sides of the outmost feathers of the tail are white, but the rest are blueish, and their interior sides are dusky. The legs are of a leaden colour; the toes are divided to the origin;

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and the back toe, as is common to the whole genus, is large and strong. This bird, which builds it's nest in hollow trees, and lays ten eggs, sometimes visits gardens, and is extremely injurious to the fruit-trees.

FRINGILLAGO AMERICANA CŒRULEA. The American titmouse; otherwise known by it's Brazilian name, *guiracenoia*.

FRINGILLARIUS ACCIPITER. A species of hawk, called by some authors *nifus*; and, in England, the sparrow-hawk.

FRIZONE. An appellation sometimes given to the *caucotrastes*, or *grosbeak*; called also the *haw-finch*.

FROG. This animal is too well known to require a minute description; but some of it's habits and properties are too singular and interesting to remain unnoticed. Compared to the bulk of it's body, it's leap, or spring, is remarkably great; and it is the most expert swimmer of all four-footed animals. For these purposes nature has excellently adapted the parts of this creature; the arms being light and active; and the legs and thighs long, and furnished with very strong muscles.

To describe the form of animals well known, would be superfluous; but, to mark those differences which distinguish one from another, is by no means unnecessary. The Frog and the toad have a general similitude, and yet the lines which divide them are unbroken and entire. The Frog moves by leaping; the toad crawls along the ground. The Frog is in general smaller than the toad, is of a brighter colour, and has a more polished surface; the toad is brown, rough, and dusky. The Frog is light and nimble, and it's belly is small in proportion to it's size; but the toad is slow, corpulent, and heavy. The Frog, when caught, raises up it's back into a kind of hump; whereas that of the toad is straight and even. The internal conformation of these two animals is nearly the same, except that the lungs of the toad are more compact than those of the Frog; and that the former has fewer air-bladders than the latter, which renders it less adapted for an aquatic life.

The brain of the Frog is but small in proportion to it's size; it has a very wide swallow; and a stomach apparently small, but capable of great distension. The heart, like that of all other animals truly amphibious, has but one ventricle; the blood, therefore, can circulate, while the creature remains under water, without the assistance of the lungs, which resemble a number of small bladders joined together like the cells of a honey-comb; they are connected to the back by muscles; and the animal can distend or exhaust them at pleasure. The male has two testiculi lying near the kidneys; and the female has two ovaries, near the same part; but neither male nor female have any evident external instruments of generation, the anus serving for that purpose in both.

These are the most striking peculiarities in the anatomy of the Frog; and in these it agrees with the toad, the lizard, and the serpent. The internal conformation of all these tribes are nearly the same; they are furnished with spongy lungs, a simple heart, and appear destitute of the external members which serve to continue the kind.

The common Frog begins to couple early in the season; namely, as soon as the ice is thawed from the stagnant waters. In some places, this genial appetite is protracted by the cold till the

month of April; but it generally begins to operate about the middle of March. The male is usually of a greyish brown colour; but the female is more inclining to a yellowish hue, and spotted with brown. When they copulate, the colours of both are nearly alike on the back; but, as they change their skins almost every eight days, the old ones falling off in the form of a mucus, the male becomes more yellow, and the female more brown. The arms and legs of the males are much stronger than those of the females; and, at the time of impregnation, they have a kind of fleshy excrescence on their thumbs, which they firmly fix to the breasts of the females. This Linnæus supposed to be the male instrument of generation; but, on a minute inspection, it is found only conducive to keep the female in a more strict embrace: it may be amputated, and the impregnation continue unimpaired; and it is even sometimes found in the females, while some of the other sex are entirely destitute of it.

The sexes couple only once a year, and then they continue united sometimes for four days successively. At this time their bellies are greatly inflated; that of the female is filled with eggs; and the skin of the male is distended with a kind of limpid water, which is ejected in impregnation. As soon as the male has leaped on the female, he throws his fore-legs round her breast, and closes them so firmly, that they are with no small difficulty disengaged. This grasp appears to be involuntary and convulsive; the animals cannot be torn asunder without a laceration of the parts; they swim, creep, and leap, thus united, till the female has shed her spawn, which at length she performs almost in an instantaneous manner. How the impregnation is performed without any apparent instruments of generation, has long been an object of enquiry, and still continues undetermined. In order to solve this difficulty, Ræsel, of Nuremberg, persevered in an examination of their mutual congress for three years successively; and availed himself of all the lights which dissection, or the analogy of formation, could furnish him. Having chosen twelve couple of Frogs thus united to each other, and placed each couple in a glass vessel filled with water, he kept them in his view almost day and night, and even sat up two nights together for the purpose of examining their operations. The first day, he observed nothing that deserved remark; the second, they began to be more agitated, the males making a noise somewhat resembling the grunting of hogs; while the females only continued to sink and rise alternately in the water. The male of the first couple ejected the humidity with which his body was swollen, and soon after quitted the female. Our philosopher continued for twelve hours to observe whether the female would emit her spawn; but finding that she was tardy, he dissected both her and the male. In the latter, the spermatic vessels were entirely empty, as might have naturally been supposed; but the spawn of the female still continued in her body: on it's being extracted and put into water, it perished without producing any animal whatever; hence he rationally concluded it requisite that the eggs should be ejected from the body of the female before they could be prolific. In another pair, the male quitted the female, which did not eject her spawn till sixteen days after; and these, like the former, came to nothing. But, with respect to some of the rest, the case was very different: the

females ejected their spawn; while the males remained in their stations, and impregnated the masses, at different intervals, as they fell from the females; and these all produced animals in the usual course of generation. From these observations, it is easy to infer, that the female was neither impregnated by the mouth, as some philosophers have imagined, nor by the excrescences at the thumbs, as was the opinion of Linnæus; but by the insperision of the male seminal fluid on the eggs of the female, as they proceeded from her body.

A recent publication, by that very penetrating naturalist the Abbe Spallanzani, seems, indeed, to throw all the light on this subject which can ever be expected. This gentleman made the same experiments as Ræsel, and found the same effects: of one hundred and fifty-six females which he opened, after they had been some time in the embraces of the males, but before they had made any voluntary emissions, he did not find one egg which was prolific; whereas those excluded spontaneously by the females were all endowed with the vital principle. He, however, farther observed, that as soon as the eggs began to be discharged, the agitations of both the male and the female were extreme; and that an obtuse point, which he suspected to be the penis, was elongated, and occasionally brought towards the eggs nearest the vent; but he was unable to perceive any emission. In order to clear up this point, he placed some couples, of which the females were beginning to discharge their eggs, in empty vessels. He succeeded in this experiment beyond expectation; for such was the attachment of the males, that they persisted in the performance of their office, though taken out of their natural element. The Abbe now clearly perceived a small jet of limpid liquor falling from the tumid point in the vicinity of the anus upon the eggs extruded from the body of the female. The eggs being afterwards put into water, and bringing forth young, he concluded, without hesitation, that the liquor was real semen; and was afterwards justified in this opinion, by discovering it in the vesiculae seminales, as well as by a whimsical and seemingly ludicrous experiment of putting breeches of waxed taffety on the male; when, notwithstanding this incumbrance, he fought the female with equal ardour: but the event was such as he might naturally have expected; the eggs were never prolific, and the semen appeared in the breeches in the shape of drops; and that these drops were real semen, was ascertained beyond all dispute, by an artificial fecundation which the Abbe obtained by their means.

A single female Frog produces from six to eleven hundred eggs at a time; and, in general, she throws them all out together by one effort; though in this operation she is sometimes occupied for the space of a whole hour. While thus employed, the male may be observed performing the part of a midwife in promoting the expulsion of the eggs, by working with his thumbs, and compressing the body of the female. The eggs being emitted, expand themselves into a round form, and drop to the bottom of the water; while the male swims off, and strikes his arms with his usual freedom and agility. The egg, or little black globe, which produces the tadpole, is encompassed with two different kinds of fluid: that which immediately surrounds the globe is clear and transparent, and inclosed in it's proper membrane; while that which surrounds the whole is muddy and mucous.

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The transparent liquor nourishes the tadpole, and answers the same purposes that the whites of eggs do to birds.

During the four first hours after the eggs are emitted, no perceptible change takes place; but after that space they begin to grow larger, to assume a lighter colour, and soon after to re-ascend to the surface of the water. At the expiration of eight hours, the white fluid in which the eggs swim grows more thick; they lose their blackness; and, as they increase in size, somewhat of their spherical figure. The twenty-first day, the egg begins to open a little on one side, and the rudiments of a tail to appear, which gradually becomes more and more distinct. On the thirty-ninth day, the little animal acquires motion; its tail is brandished at intervals; and it then becomes evident that the circumfused liquor nourishes it. In two days more, some of these animalcules fall to the bottom; while others continue swimming in the surrounding fluid with increased vivacity and motion. Those which fall to the bottom remain in that situation the whole day; but, after having expanded themselves a little, (being hitherto folded up) they mount at intervals to the mucus they had before quitted, on which they are observed to feed with great alacrity. The next day, they assume their tadpole form; and, in three days more, they are perceived to have two little fringes beneath the head, which supply the place of fins; and these, in four days after, acquire a more perfect form. At this period they begin to feed greedily on such weeds as their situation affords; and, quitting their former food, they derive their subsistence wholly from them till they arrive at maturity. When ninety-two days have elapsed, two small feet begin to be protruded near each of their tails; and, four days after, they refuse all vegetable food, their mouths appear furnished with teeth, and their hinder legs are compleatly formed. In a day or two more, their arms are compleatly produced; and each of the animals appears wholly perfect, except that it still continues to carry a tail. In this singular situation, the creature resembles at once a Frog and a lizard; which figure it retains for about six or eight hours; and then the tail dropping off by degrees, the animal appears in its last and most perfect form.

The Frogs having thus changed their figure in less than a day, are observed to change their appetites likewise; and so extraordinary is this transformation, that their former food is absolutely rejected; and they immediately become carnivorous, and prey on worms and insects; but as the water does not supply these in sufficient abundance, they are compelled to quit their native element, and to seek their food on land. At first, indeed, their imbecillity obliges them to skulk among bushes, and under stones; but, when a shower has once fallen and refreshed the earth, the young animals are seen to quit their retreats, in order to enjoy the grateful humidity. On many occasions the ground is perfectly obscured by their numbers; some hunting for their prey, and others searching for safe retreats. From the myriads that thus present themselves, some credulous persons have conjectured that these animals were generated in the clouds, and showered down on the earth; but, had such been at the trouble of tracing them to the nearest pool, they would no doubt have reasoned in a very different manner.

As the Frog derives the greatest part of its sub-

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sistence from the land, so it lives principally on it: however, when the cold nights commence, it returns to its native element, always making choice of stagnant waters, where it can lie concealed at the bottom; and there it continues torpid, or at least possessed of very little motion, during the winter; like the rest of the dormant race, neither requiring food, nor needing any assistance from the air.

The difference of sex in these animals is not perceptible till they have arrived at their fourth year; nor do they begin to propagate till they have reached that period. Hence, on comparing their slow growth with their other habitudes, it would seem that they live about twelve years; but so numerous are their enemies both at sea and land, that it is probable very few of them reach that period which would naturally terminate their lives.

Frogs, as already observed, live on insects, but they never devour any not endowed with motion. They continue fixed and immoveable till their prey appears; and, when they think it sufficiently near, they spring forward with great agility, dart forth their tongues, and seize it with unerring aim. The tongue of the Frog, as in the toad, the lizard, and the serpent kinds, is extremely long, and formed in such a manner, that its point is reverted down the throat: this offensive weapon is likewise covered with a glutinous substance, by means of which every animal which it touches adheres to it, and is thus held fast till it can be drawn into the mouth of the Frog.

But though Frogs are sufficiently predaceous, they are nevertheless capable of continuing a long time without food. A German physician kept one of them for eight years in a glass vessel covered with a net; during which long period, its food was at all times very sparing: in summer it was fed with grass; and in winter, with hay a little moistened. Flies were also occasionally put into the glass, which it generally followed with open mouth, and caught very expertly. In winter, when flies were with difficulty procured, the animal generally became lean; but, in summer, it recovered its flesh again. It was kept in a warm room, and seemed always lively, and ready for its prey: however, on the commencement of the eighth winter, when no flies could be found, it languished, and died. It is not, indeed, certain how long this animal might have lived, had it been furnished with proper nourishment; but of this we are aware, that a very small quantity of food will supply the necessities of these creatures.

The Frog is so extremely tenacious of life, that it will jump about several hours after its head has been amputated; and continue in motion even after it has been embowelled. When stripped of its skin, either by cruel children, or experimental naturalists, it appears for several hours to feel no abatement of its natural vigour; and we are credibly informed, that many of these animals, after having undergone this terrible operation, have acquired new skins.

The croaking of Frogs is so well known, that from this circumstance, in some countries, they are distinguished by the ludicrous appellation of Dutch nightingales: indeed, the noise of the aquatic Frogs of Holland is loud beyond conception; and it will hardly be credited, that animals of such a diminutive size should be able to send forth notes which can be heard at the distance of three miles; yet this is actually the case. According to the ingenious

ingenious Ræfel, the large Water-Frogs have voices as loud as the bellowing of bulls; to effect which, they puff up their cheeks to a surprizing magnitude. However, the males only croak, the females remaining silent; and the voice of the former seems only the call of courtship. It is certain that, during the season of copulation, the loudness of their croaking is in some places very troublesome; for then whole lakes seem to be vocal, and their various dissonant notes almost stun the neighbourhood. Before rainy weather, they also exert their voices to the utmost; they are then heard to pour forth their tones with unceasing assiduity, and to welcome the approach of their favourite moisture. No barometer more certainly prognosticates an approaching change of weather; and this may probably serve to explain an opinion which some people entertain, that there is a certain month in the year, called paddock-month, in which Frogs never croak: while the fact is, that, in the hot season, when the moisture is dried up, they neither enjoy health nor food in the same proportion as during rain; and this renders them mute and inactive.

As Frogs closely adhere to the backs of their own species, so it has been proved, by repeated experiments, that they also adhere to those of fishes. They will at times stick to the backs of carp in ponds; and, fixing their fingers in the corner of each eye, in this manner they are often caught together, the carp being blinded, and very much emaciated. Whether this act proceeds from the desires of the Frog when disappointed of it's proper mate, or whether it be the effect of a natural enmity subsisting between Frogs and fishes, is not easily determined. However, the following story, as related by Walton, might incline us to adopt the latter opinion. 'As Dubravius, a bishop of Bohemia, was walking with a friend, by a large pond in that country, they saw a Frog leap on the head of a pike, which lay very quietly by the shore-side; when the Frog having expressed malice or anger by his swollen cheeks and staring eyes, did stretch out his legs, and embrace the pike's head, and presently reached them to his eyes, tearing with them and his teeth those tender parts: the pike, irritated with anguish, moved up and down the water, rubbing himself against weeds, and whatever he thought might rid him of his enemy; but all in vain, for the Frog did continue to ride triumphantly, and to bite and torment the pike till his strength failed; and then the Frog sunk with him to the bottom of the water. Presently the Frog appeared again at the top, and croaking, seemed to rejoice like a conqueror; after which, he immediately retired to his secret hole. The bishop, who had beheld the battle, called his fisherman to fetch his nets; and by all means to get the pike, that they might declare what had happened. The pike was drawn forth, having both his eyes eaten out; at which, when they began to wonder, the fisherman assured them he was certain that pikes were often so served.'

The Frog affords the curious in microscopical observations a very beautiful view of the circulation of the blood; but the method of examining it to advantage was first discovered by the ingenious Dr. Stuart. This gentleman made use of the solar microscope in a particular manner adapted to that purpose. He opened the skin of the belly from near the anus to the throat; and then giving it a little snip side-ways, both at top and bottom,

and sticking a fish-hook into each corner of the skin, it was easily extended before the microscope; and exhibited on the screen the most beautiful view imaginable of the veins and arteries of the skin, with the blood circulating through them. In the arteries, thus viewed, the blood is seen to stop, and recede a little at every pulsation by the dilatation, and rush forcibly on again by the contraction of the heart; while in the veins it ever keeps the same equable and uniform current, with a surprizing rapidity; and, when the screen is removed farther back, and the object by that means more enlarged, the alternate expansion and contraction of the sides of the arteries are very visible. After this, the abdomen of the Frog being opened, and it's muscles extended before the microscope in the same manner with the skin, their structure is beautifully displayed, being all composed of bundles of transparent strings of fibres, lying parallel to each other, and joined by a common membrane. When this has been sufficiently examined, a part of the entrails being pulled out and extended with the mesentery, one of the finest views of the circulation of the blood is exhibited: that fluid is seen passing through numberless vessels at one and the same instant, in some one way, and in others directly contrary. Several of the vessels are thus magnified to more than an inch in diameter, and the globules of blood running through them appear nearly as large as peppercorns; while, in many of the minutest vessels, only single globules are able to find a passage, and that too by changing their shape into an oblong spheroid. The pulsation and acceleration of the blood in the arteries are also very agreeably shewn by this means. As the animal, under examination, becomes languid and near expiring, the blood in the arteries will often stop on a sudden, and seem as if it were coagulating, and then run back for some time; after which it will again recover it's natural course with a great deal of rapidity. A due consideration of the foregoing particulars may possibly account for the intermissions, starts, and irregularities, perceived in the pulses of persons at the point of death.

FROG, EDIBLE. This animal differs from the common Frog in having a high protuberance on the middle of the back, which forms a very sharp angle. It's colours also are more vivid, and it's marks more distinct, being a pale or yellowish green, impressed with rows of black spots from the head to the rump. Both this and the common Frog are eaten in some countries. 'In the markets at Paris,' says Pennant, 'we have seen whole hampers full, which the venders were preparing for the table, by skinning and cutting off the fore-parts, the loins and legs only being kept.'

FROG, GREEN, OR SMALL TREE-FROG. This species is distinguished from the other kinds by their colour, the minuteness of their size, and by their sitting on the leaves of trees. In Germany and Switzerland they are frequently seen on trees and shrubs in the evening; and, from their note, they might be mistaken for birds rather than Frogs. They seem to be the cicadæ of Virgil.

FROG OF MARTINICO. This animal, which is the most beautiful of the genus, is of a grey colour with yellow and black spots or stripes; and lives solely in the woods, where it makes a noise in the night-time somewhat similar to the barking of a dog.

These Frogs are above a foot in length, without

F R O

out including their thighs, which are large and fleshy. The French speak highly of the whiteness, tenderness, and delicacy of their flesh; and, in dressing them, they waste only their heads. They fricasee them like chickens, and boast that strangers really take them for such: and the negroes hunt them in the night-time with lighted sugar-canes that have passed through the mill.

Some naturalists observe, that these Frogs bring forth in hollow trees; and that they first emit a quantity of white froth, about the breadth of a man's hand, on which they lay six, eight, or a dozen eggs, more or less, of the size of coriander seeds, and of an orange colour. It is uncertain whether they sit on them or not; however, it is well known that the females never quit the place where they lay their eggs till they are hatched.

FROG, CAROLINA. In this country there are several species of Frogs; but the most singular is the Bull-Frog, so called from the exact resemblance which it's croaking bears to the voice of that animal. These Frogs are very large; and, according to some authors, afford as much flesh as a full-grown pullet. Catesby says, that they are of a brown colour, having a great number of dark spots mixed with a greenish red. The eyes are brown; the irides are yellow; and under the eyes there are two round ears, covered with a thin membrane.

FROG, AMERICAN, OF SEBA. This species has an air-bladder on each side of the lower jaw, which in hot weather is replete with that element. It is of a bright reddish colour with deep red spots; and it's claws are large, and shaped like the leaves of scurvy-grass. This Frog begins to croak with uncommon ardour about sun-set.

FROG, BRAZILIAN. The head of this creature, which is large, resembles that of the toad; and the body is of a reddish ash-colour interspersed with red warts.

FROG, SLA, AMERICAN. This species is of a prodigious size; the feet, if we may credit Seba, being a quarter of a yard in length. The whole body, except the head, is an ash-coloured brown, marked with great and small warty spots of a faint greyish colour below, and of a yellowish ash-colour on the apex. The back, and the space between the shoulders, rise into a prominence, and seem to be divided from the other parts by whitish lines. On the fore-feet there is a kind of armour, of a bright ash-colour speckled with black; the head is barred with small reddish streaks; the eyes are large and sparkling; the ears are round and short; the tongue is large, it's fore part adhering to the lower jaw; the fore-feet have each four toes, composed of four joints, and the toes on the hinder feet are large, and armed with claws connected by a thin membrane.

FROG-FISH. An appellation given to the *rana piscatrix*, or lochini, called in England the sea-devil and the angler.

FROG-FISH OF SURINAM. This singular animal is produced by the transformation of a Frog into a Fish. The Frog, in it's first state, is spotted with brown, yellow, and green, which colours are paler on the belly; the hinder feet are webbed like those of the goose, but the fore legs are destitute of webs. The last metamorphosis this creature undergoes, is the protrusion of a tail; after which it gradually acquires the shape of a Fish, the two fore-feet decreasing and wasting by degrees, and then the hinder legs, till at length the Frog is transformed into a perfect Fish. The Indians and

F U L

Europeans of Surinam call these Fishes jackies; they are cartilaginous, of a substance like that of the mustela, and esteemed very delicate food; and a bone or cartilage runs down the back, from which spread small bones all over the body. These Fishes are first of a darkish colour, and afterwards grey; they are adorned with beautiful scales; and the body of each is divided into two equal parts.

FROTH WORM, OR CUCKOW-SPIT. An appellation given to a white froth or spume, very common, during the spring and summer seasons, on the leaves and stalks of various plants. Though all writers on vegetables have perhaps noticed this froth, few of them, till very lately, have understood it's origin. Many imagined it to be an exhalation from the earth; some esteemed it the saliva of the cuckow; and others, the extravasated juices of the plants, or a kind of hardened dew. But all these opinions are equally erroneous: the froth in question undoubtedly proceeds from a small inclosed insect, with an oblong, obtuse body, a large head, and small eyes. This animal emits the spume from the anus, and other parts of it's body; and, after undergoing several changes in this situation, it bursts into a winged state, and flies abroad in quest of it's mate. It has four wings, the two external ones being of a dusky brown colour marked with two white spots.

FRUGIVOROUS. An epithet used by naturalists to express such animals as subsist principally on fruits.

FRUIT-FLIES. A name given to a species of small black Flies found in vast numbers among fruit-trees in the spring season. Lewenhoeck, who preserved some of these insects for his microscopical observations, observed that they did not live longer than a day or two; but that the females, during this period, laid a great number of longish eggs. Those gardeners who suppose that these Flies wound the leaves of trees, labour under a mistake: it is true, indeed, that they feed on their juices, but they have no weapons with which they can extract them; they subsist on such as are naturally extravasated; and, when these are insufficient, they haunt those places to which pucerons resort, and partake of the fruits of their labour.

FRUSO. An appellation given by some naturalists to the *Coccothraustes Cristata Indica*, or Virginian nightingale.

FUCA. A fish nearly allied to the genus of blenni; the phycis of Aristotle and Aelian, and the tinca marina of Salvian and Rondoletius.

FULICA. The classical name for the Coot.

FULIGULA. A name given by Gesner to a species of duck common to several parts of the world.

FULLO. An appellation given by Gaza and others to the tench, or black cyprinus; called by the Greeks *piston*.

FULMAR. A species of procellaria, or petrel, that inhabits the ile of St. Kilda, one of the Hebrides, where it appears in November, and continues the whole year, except during the months of September and October. It lays a large white egg, and hatches it's young about the middle of June.

This bird is extremely beneficial to the islanders; inasmuch as it supplies them with oil for their lamps, down for their beds, a delicacy for their tables, a balsam for their wounds, and a medicine for their diseases. It is also an infallible prognosticator of the weather, particularly of the change of

G A D

wind: if it comes towards the land, no west wind is to be expected for some time; and the contrary when it returns, and keeps at sea.

The Fulmar, like all the petrels, has a peculiar faculty of spouting from it's bill, to a considerable distance, a large quantity of pure oil; which it discharges, by way of defence, in the face of any person who attempts to seize it. In order to preserve this oil, the natives always endeavour to catch this animal by surprize: but sometimes it spurts this treasure in their faces while they are engaged in the pursuit of other game; and it is said, that to a certain gentleman this unexpected salute really proved fatal, by making him suddenly quit his hold. This oil, exclusive of domestic purposes, is said to be very serviceable in rheumatic cases.

The Fulmar is larger than the common gull; the bill is very strong, yellow, and hooked at the extremity; the nostrils are composed of two large tubes, lodged in one sheath; the head, neck, belly, and tail, are white; the back and coverts of the wings are ash-coloured; the quill-feathers are dusky; the legs are yellow; and, instead of a back toe, it has only a sort of straight spur.

The Fulmar feeds on the blubber or fat of whales, and other animals; which being soon convertible into oil, supplies it with the constant means of defence, as well as of provision for it's young, which it nourishes by injecting that fluid into their mouths. It is likewise said to feed on sorrel, which probably helps to qualify the unctuous diet on which it principally subsists.

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Frederic Martens, who saw vast numbers of these birds at Spitzbergen, observes, that they are very bold, hovering round the whale-fishers in large flocks; and that when a whale is taken, in spite of all endeavours to the contrary, these creatures will perch on it, and pick out large lumps of fat, even while the animal is alive. Whales are also frequently discovered at sea by the multitudes of Fulmars which hover over them; and, when a single whale happens to be wounded, prodigious numbers of these birds pursue it's bloody track.

FUMER. An appellation sometimes given to the pole-cat.

FUNDULUS. A name used by various authors to express the cobitis, called in England the loach.

FUNDULUS is also applied by Schoneveldt, and some others, to signify the common gudgeon. The absurdity and confusion of giving two fishes the same name, which in fact is peculiarly appropriated to neither, are very evident in this, and numerous other instances which fall under a naturalist's notice: thus, even the word Gobio, the common appellation of the gudgeon, confounds that fish with another very different genus; and Artedi deserves some commendation for clearing up this intricacy, by referring the gudgeon to the genus of cyprinus; giving it the specific name of the five-inch spotted cyprinus, with the lower jaw shorter than the upper, and with two cirri or beards at the mouth.

FURO. An appellation given by some authors to the ferret, called also furunculus and iētis.

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GAD-FLY. A species of oestrus, having spotted wings, a yellow breast, a brown band, and a yellow abdomen terminating in a black point. This insect is sometimes called the Dun-Fly, Ox-Fly, and Breeze-Fly. Like the gnat, when examined by the microscope, it appears to have a long proboscis with a sharp dart, and two darts sheathed within it, which penetrate the skins of animals, and form a passage for their blood, on which the insect feeds.

The eggs of the Gad-Fly are sometimes deposited on the skins of various quadrupeds, particularly those of rein-deer, where they often occasion incurable disorders. In general, however, these eggs are laid in the water, each of which there produces a remarkable maggot, of a long flattened figure, and a brown colour, with a pencil of fine downy hairs at it's tail, which it spreads into a circular form on the surface of the water, whilst it's head is plunged under it in search of food. In the act of descending, these hairs being drawn together in an oval form, and made to inclose a bubble of air, this assists the insect in rising again; and, should this bubble happen to burst, the creature squeezes another out of it's body, in order to supply it's place. The snout of this maggot has three divisions, whence are darted three

little pointed weapons resembling the tongues of serpents.

GADUS. A genus of the malacopterygious or soft-finned fishes, in the Artedian system; the characters of which are these: the branchiostegic membrane on each side contains seven bones of a somewhat cylindric shape; the back, in some species, has three fins, and in others only two; and the head is generally compressed, but in some it is depressed.

Artedi enumerates the following discriminations: those which have three fins without any cirri, of which there are three species, the whiting, the cod-fish, and the whiting-pollack; those which have three fins with cirri, to which belong the cod-fish, the haddock, the pouting, and the Cornish poor; and those which have two fins on the back, comprehending the hake, the ling, the eel-pout, and the bearded-gadus with a furrow at the first of the two back-fins, called in Cornwall the whistle-fish.

In the Linnæan system, the Gadus is a genus of the jugulares. It's characteristics are these: it has a smooth head; seven slender branchiostegous rays; an oblong body with deciduous scales; the fins all covered with a common skin; and the ventral fins slender, and terminating in a point.

GADWAL.

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GADWAL, OR GRAY; the *Anas Sterpera* of Linnæus. See DUCK, GADWAL.

GAGNOLA. The Spanish appellation for a species of the *Acus*, or *Syngnathus*, of Artedi. The particular species described under this name is called by that naturalist the hexagonal-bodied syngnathus with a pinnated tail. It seems to be the *acus Aristotelis*, or *acus secunda*; and is known in England by the several names of the needle-fish, the trumpet-fish, and the tobacco-fish.

GAIDEROPSARUS. A name given by some naturalists to a fish of the truttaceous kind caught in the Mediterranean, and more usually called *callarias*.

GALADES. An epithet given by Rondolelius to a species of *chama* remarkable for its milky whiteness, and derived from *Galé*, Milk. This species is extremely elegant.

GALBULA. A bird of the thrush kind common in Italy and Germany. It is very remarkable for the elegant structure and hanging position of its nest; and is thence called by some *picus nidum suspendens*; and, by others, *oriolus*, *chloræus*, and *icterus*; being supposed to be the *icterus*, or jaundice-bird, of Pliny and the ancient naturalists.

This bird is somewhat larger than the common thrush. The beak, which is about half an inch long, is red; the wing-feathers are black; but some are tipped and edged with white, and others are varied with yellow. The female is less beautiful than the male, her colours being more dusky. The *Galbula* is a bird of passage, feeds on insects, and is esteemed a great delicacy.

GALEA. A genus of *echinodermata*, or sea hedge-hog, shaped like a large elevated helmet, composed of several transversely joined plates or affluæ, and covered with very small and rough tubercles, which appear like small granulé. When found fossil, this genus is called the helmet-stone; and is marked with ten rows of double lines, either crenated or punctuated, running from the top to the base.

Three species of this genus have been described by naturalists; one with a scutated head having an oblong pentagonal plate like a shield on its summit; a second with a naked head, and destitute of a scutum; and a third having the tentæ laurated.

GALFA PISCIS. An appellation given by Gesner and others to the fish more generally called *galathea*; and, by Artedi, made a species of the *branchia* with four bifid beards under the throat.

GALLA VENTRORUM is also sometimes used to signify the common mussel.

GALLEITO. A fish of the genus of blenni in the Artedian system, distinguished by the name of *de blennius* with the upper jaw longer than the lower, and the top of the head acuminate. Rondolelius calls it the *alunda non cristata*; and, in England, it is known by the name of the mul-tinny, and bullard. Its colour is greenish, without any variegation in some; but, in others, a number of faint blue transverse lines are diffused on the back, the sides, and the fins; the intermediate spaces between these lines being of a bluish brown hue on the back. It is a very vivacious animal; and, like the eel, lives many hours out of its native element. It is found among rocks and stones about the shores of the Mediterranean, and also on some parts of the British coasts.

GALEUS CANIS; the *Squalus Galeus* of Linnæus. See CANIS GALLUS.

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GALEUS LÆVIS; the *Squalus Mustelus* of Linnæus. The smooth hound-fish, so called in order to distinguish it from the *Galeus spinax*, which is furnished with spines on its back. The back and sides of the smooth hound-fish are ash-coloured; the belly is white; the body is long and round; the end of the nose is obtuse, and projects considerably beyond the mouth and eyes; and the tail is bifid. It has two dorsal fins, and two pair of ventral fins; and the asperities of the jaws supply the place of teeth.

GALEUS RHODIUS. A name given by Athenæus, and some others of the ancients, to a very large and delicate fish, which Schoneveldt conjectures to be the sturgeon; and, in confirmation of this opinion, adduces several powerful arguments.

GALEUS ACANTHIAS, OR SQUALUS SPINAX. A fish of the shark kind, called in England the picked dog-fish, and the hound-fish. The body is long, round, and destitute of scales, but covered with a skin so extremely rough, that several artists use it in polishing their works. The back is of a brownish ash-colour; the belly is white, and somewhat smoother than the rest of the body; the nose is long, and rounded at the extremity; the pupil of the eye is black, of an elliptic figure, and placed transversely; and the mouth, which is situated near the middle of the snout, has two rows of minute teeth. This fish is common in the Mediterranean and English seas.

GALEUS STELLATUS, the Starred Hound-fish. A species of dog-fish remarkably variegated with white spots shaped like stars.

GALEXIA. An appellation given by Galen, and some of the more ancient writers, to the common lamprey.

GALL-INSECT. A class of animals of various shapes, sizes, and colours, found on the stalks and branches of trees, shrubs, and perennial plants.

The insect which forms and resides in the Gall-nut is furnished with a certain implement, by means of which it penetrates into the bark of the tree, or into that spot which is just begun to bud, and there sheds a drop of corrosive fluid into the cavity. Having thus formed a receptacle for its eggs, it there deposits them, and dies soon after. The heart of the bud being thus wounded, the circulation of the nutritive juice is interrupted; and the fermentation thereof, with the poison injected by the fly, burns the adjacent parts, and alters the natural colour of the plant. The juice or sap, turned back from its natural course, extravasates, and flows round the egg; after which it swells and dilates by the assistance of some bubbles of air, which gaining admission through the pores of the bark, run in the vessels with the sap. The external coat of this excrescence is dried by the air, and assumes a roundish figure. This little ball receives its nutriment, growth, and vegetation, as the other parts of the tree, by slow degrees, and forms what we call the Gall-nut. The worm which is hatched within this substance undergoes various transformations, till at last it acquires wings, and emancipates itself from its confinement.

The Gall-Insects, whose spoils are converted to many useful purposes, are bred on a kind of Asiatic oak. But, besides these, animals of a similar kind are met with on a variety of other trees, shrubs, and plants. Many, however, have referred them to the vegetable kingdom, and denied their relation to the animal; and, among the rest, the accurate

rate Count Marfigli, after very attentively examining the Gall-Insects of one species, remained seemingly convinced that they were real vegetable excrescences.

Indeed, these creatures have so little about them to attract the observation even of the curious, that they might probably have remained much longer unregarded, were it not that they multiply so prodigiously on some fruit-trees: the peach-tree, in particular, is sometimes in a manner covered with them, and these of more than one species; some being of the globular kind, and others of the boat figure. The branches, thus covered, look rough and scabby; and gardeners, sensible that, whatever the substances are, they must be nourished at the expence of the juices of the tree, have set about inventing means for their destruction. Orange-trees, which are frequently full of these insects, first excited the attention of the more curious observers of such minute parts of nature. These are principally of that kind whose figure represents an inverted boat; and on them Mess. de la Hire and Sedileau made a set of curious experiments, which were published in the Memoirs of the Academy of Paris. But though it must be confessed that many species of these little animals are injurious to fruit-trees, there are some kinds of them whose use and value fully compensate for this loss; since it is from one species of these little creatures that the inhabitants of some places make such great gains, gathering a harvest of them without the expence of planting or cultivating. The kermes, so well known by name, though so little truly understood, is of this kind; and to it both the physician and the dyer are under very considerable obligations.

Lister was, perhaps, the first who discovered the Gall-Insects. He found these animals on the plum, cherry, vine, laurel, and many other trees, and calls them the patellæ of these trees. He appears to have been well apprized of their animal origin; and, in the year 1671, discovered that some of them would strike a carnation red colour with ley of ashes, affording not only a beautiful, but also a permanent ringe.

GALL INSECT FLY. This animal, which is the male of the Gall-Insect species, is furnished with two wings, and possesses several peculiarities. As a great resemblance exists between these Flies in all the Gall-Insect class, a description of the peach Gall-Insect may give a proper idea of all the rest. This animalcule, when examined with the assistance even of the best glasses, exhibits nothing on the under part of it's head analogous to the organs of other Flies, destined to convey their nourishment; nothing which bears the most distant resemblance to the trunks of other two-winged Flies; nor any thing which can be compared to teeth. Where the teeth, if any, ought to be placed, there are only two black, shining hemispheric bodies, in every respect resembling eyes. Exactly opposite these, on the other side of the head, and near the bases of the antennæ, there are two other similar bodies, which, notwithstanding the singularity of their situation, cannot be taken for any thing else but eyes. It would therefore seem, that this Fly has no organs for the reception of aliments, but has two eyes in their stead. However, the want of these organs is by no means singular with regard to the insect world, since moths and butterflies afford instances of it: many of these may be seen, as soon as they are produced from the chrysalis, in an apt state to propagate their species, and deposit their eggs;

and this great end of their existence being achieved, they have no farther occasion for life, nor any means for it's support: and probably the case is the same with respect to these Flies, which, as soon as they are disengaged from their coverings, search out and fecundate the females; which act finishes the business of their lives.

Another curious circumstance attends this species; namely, that all the Flies of this kind are produced from their shells backwards; whereas all other species of two-winged Flies are produced with the fore-parts of their bodies first: and, if we cannot assign a reason for this singularity in the production of the Fly now under consideration, we can, however, easily perceive, that every thing is prepared and destined for it's convenience. In the nymphs of other Flies, all the legs are constantly applied close to the body; whereas, on the contrary, in the nymph of the Gall Insect Fly, the legs placed next the head, or the first pair, are constantly ranged upwards, and each of them embraces one side of the head. The uniform position of these legs in this direction is a proof that it is the order and course of nature in the production of the animal: nor are they improperly thus placed in a species which, contrary to all others, is to force itself backwards out of it's shell, since they assist the creature in it's operations; and, as the anterior parts of the cases of other Flies naturally and easily open, to give passage to the animals, so also does the posterior part of this.

GALLEY-FISH; the Medusa of Linnæus. This animal, which is referred to the insect tribes by Linnæus, to the eye of a heedless spectator seems a transparent bubble swimming on the surface of the sea, or like a bladder variously and beautifully painted with vivid colours, where red and purple predominate as variously opposed to the beams of the sun. It is, however, an actual Fish; the body of which is composed of cartilages, and it's skin filled with air, which thus keeps the animal floating on the surface of the water, according as the waves and winds happen to drive. Sometimes it is seen dashed on the shore by one wave, and repelled by the next. Persons who walk along the beach often tread on it; and the bursting of it's body yields a considerable report.

The Galley-Fish has eight broad feet with which it swims, or which it expands in order to catch the air, after the manner of a sail; and, by means of these legs, which possess an adhesive quality, it fastens itself to whatever it meets. Latat informs us, that he could never discover whether it moved when on shore, though he tried every expedient to make it stir; but only observed that it strongly adhered to whatever substances he applied it.

These creatures are very common in America, particularly along the coasts of the Gulph of Mexico, where they grow to the size of a goose egg; and, whenever the shore is unusually covered with them, it is deemed the certain prognostic of a storm. They are generally seen floating; and no efforts can sink them to the bottom. All that appears above water is a bladder, clear and transparent as glass, and shining with the most vivid colours of the rainbow: beneath the surface are four of the feet already mentioned, which serve as oars, while the other four are expanded for sails. But the most extraordinary circumstance attending this creature, is the violent pungency of the slimy substance with which it's legs are lined: if the least quantity

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quantity of this only touch the human skin, so caustic is it's quality, that it burns like hot oil. The pain occasioned by it is very acute during the heat of the day, but ceases towards the cool of the evening. It is very probable that, from feeding on these creatures, several of the West Indian fishes contract their poisonous quality.

GALLINÆ. In the Linnæan system of zoology, this constitutes a large order of birds; the general characteristics of which are these: the beak is conic and bent; the upper mandible is arched, and extends beyond the lower; the nostrils are half covered with a cartilaginous convex membrane; the feathers of the tail exceed twelve in number; and the feet are cloven, but the exterior and interior toes are connected to the first joint of the middle toe by a small membrane. The peacock, the dodo, the turkey, the pheasant, the Guineahen, the crax, and terrao, belong to this order.

GALLINA MOSAMBICANA. A name under which Nieeremberg has described a kind of fowl, which he says has not only black feathers, but also black flesh and black bones; but this account Ray has fully exploded.

GALLINA PISCIS. A fish of the cuculus kind, more usually known by the name of the *Corax Piscis*.

GALLINACEOUS. An epithet given to a class of birds of the pheasant kind, including the common cock and hen; the characters of which are these: their beaks are short, strong, and somewhat crooked, being adapted to the picking up of corn, the usual food of the whole species; their bodies are large, thick, and fleshy; their wings are short, and ill adapted to extensive flights; they breed a numerous progeny; they build their nests on the ground; their young immediately provide for themselves; and, lastly, some are furnished with long spurs behind their legs.

GALLINAGO. A general term for heath-fowls; such as the woodcock, black-cock, &c.

GALLINAGO MINOR. See *SNIFE*.

GALLINE. A Massilian appellation for the flying-fish, called by authors *milvus* and *lucerna*. It is a species of *trigla*; and is distinguished by Artedi under the name of the *trigla* with the snout somewhat bifid at the end, and the lateral lines forked towards the tail.

GALLINULA. A genus of birds which swim in the water, and yet are destitute of webbed feet, or any membranes joined to their toes which might augment their breadth. Their bills are thick at their bases, sloping to their points; their upper mandibles, which extend far up their foreheads, are callous; their wings are short and concave; their bodies are compressed; and their toes are long, and divided to their origin. The common moor-hen, together with a great number of other birds, both foreign and domestic, such as the water rail, the grinnetta, and the ochropus, are of this genus.

GALLINULA AERYTHROPUS. A term used by many authors to express the bird commonly called the red shank in England.

GALLINULA HYPOLEUCOS. A name given by some naturalists to the beccafine, or, as it is generally called in England, the sand-piper. See *TRINGA*.

GALLINULA MELAMPUS. An appellation given by Gesner to a German bird, called, in the language of that country, *rotkehlchen*.

GALLINULA RUCROPUS, PHICNI-

G A L

COPUS, AND OCHROPUS. Names by which Gesner, and some other writers, have distinguished the common *tringa*; a bird whose legs, at different ages, and in the different sexes, are greenish, yellowish, and reddish.

GALLINULA SERICA. A term indiscriminately used by many authors to signify the grinnetta and the water-rail; both birds of the moorhen kind, but considerably smaller.

GALLINULE, COMMON. This bird, called also the moor-hen, or water-hen, weighs about fifteen ounces; it's length, to the end of the tail, is fourteen inches, and it's breadth twenty-two; the crown of the head, the hind-part of the neck, the back, and the coverts of the wings, are of a fine deep olive-green colour; the under-side of the body is cinereous; the chin and belly are mottled with white; the quill-feathers and the tail are dusky; the exterior web of the first primary feather, and the ridges of the wings, are white; the vent is black; the feathers just beneath the tail are white; and the legs are dusky green. The plumage of the female is much less brilliant than that of the male; and it is likewise inferior in size. During the season of love, the plumage of this bird assumes a beautiful olive gloss, and the bill becomes a full, bright red; circumstances which naturalists in general have overlooked, though sufficiently striking.

The Gallinule feeds on grassy banks and other situations in the vicinity of fresh waters; and even in the waters, provided they are covered with weeds. It builds in low trees and shrubs by the water-side, breeding twice or thrice a year; and, when the young are grown up, they are always compelled to shift for themselves. The female lays seven eggs of a dirty white colour, slightly spotted with rust. It strikes with it's bill like the hen; and, during the spring, has a shrill call. In the act of flying, it hangs down it's legs; and in that of running, flirts up it's tail very frequently. The bottom of the toes being flat and broad, it is thereby enabled to swim; and, from this part of it's conformation, it seems to be the bird which connects the cloven-footed aquatic fowl with the fin-toed.

GALLINULE, SPOTTED; the *Rallus Porzana* of Linnaeus. This species, which is migratory in Great Britain, frequents the sides of small streams, where it conceals itself among the bushes. It's length is nine inches, and the expansion of it's wings fifteen; it's head is brown, spotted with black; it's neck is a deep olive, spotted with white; and from the bill, beyond the eyes, there is a broad grey bar. The plumage of it's back is black and olive; the scapulars are olive coloured, finely marked with two small white spots on each web; and it's legs are of a yellowish green hue.

GALLOWAY. A peculiar breed of horses, so called from the county of Galloway in Scotland, where they principally abound. Tradition reports, that this kind of horses sprung from several Spanish stallions, which swam on shore from some ships wrecked on the coast, belonging to the famous Armada; and, propagating with the mares of the country, furnished the kingdom with their posterity. These horses are of a middling size, strong, active, nervous, and much esteemed.

GALLUS. The classical name of the cock.

GALLUS GRUNNIENS. An East Indian fish approaching to the nature of the *scorpaen marinus*, and called by the Dutch *knone haen*. The

G A L

body is thick and rounded; the skin is destitute of scales, but rugged, and full of tubercles spotted and variegated with short streaks of a blackish hue; the head is large and thick, and extremely full of excrescences; the nose is large; the eyes are red; the tail is obtuse; and the flesh is reckoned very delicious. When this fish is first taken out of the water, it makes a very singular grunting noise; and hence it receives it's name.

GALLUS MARINUS. An appellation given by some naturalists to the doree; a fish more commonly known by it's classical name, faber.

GALLUS MARINUS, is also a name by which some authors have distinguished the orbis piscis.

GALLY-WORM, the Julus of naturalists. An insect of the centipede kind, of which there are several species. They are furnished with more feet than any other insects; and their bodies are composed of a great number of rings. Some of them are smooth, and others hairy; some are of a yellow colour, others are black, and others again are brown. One species has a black head, a back of a golden yellow colour, a belly of a blueish silver colour, and a vast number of feet like hairs. A second species is entirely black, except a white line running from the head to the tail along the middle of the back. A third kind has a reddish head, and feet of the same colour; the body is a dull yellow; and the feelers, as well as the hairs near the tail, are livid. And a fourth species is of a reddish black hue, except that the feet and feelers are of a lighter colour. Some of these insects lie hid in the moss growing on the barks of trees; and others under stones, and among rubbish. Mousset observed two species of the hairy kind; one of which was somewhat above an inch long, and had a tapering body of a whitish colour, but the hairs were black and very short: the back and belly of the other species were of a livid colour, spotted with an unpleasing yellow; the mouth was somewhat reddish; the eyes were black; and the hairs were grey.

All these animals, when touched, either contract, or roll themselves up into balls; but they do not appear to be venomous, as many have supposed, having been frequently handled and irritated without any dangerous consequences.

GALLY-WORM, SHINING. This insect, which is frequently found on heaths, may be easily distinguished by it's glow-worm-like lustre. It is a native of Great Britain, and various other European countries, as well as of some parts of America.

GALLY-WORM, BROWN. This species has a hundred legs on each side, and grows to the length of two inches. The body is brown; a double line of an iron-grey colour runs along the back; the back is roundish; the belly is smooth; the skin is somewhat glossy; and the feelers, which are short, consist of five joints. It generally resides a little below the surface of the earth.

GALLY-WORM, GREY. This creature is about three-quarters of an inch in length, and is furnished with a hundred and twenty feet on each side; it's back is roundish; it's belly is flat; and it's colour is a pale grey, except that two iron-grey lines appear on it's back, and that every joint of it's body is longitudinally streaked. It consists of sixty joints; and is furnished with whitish feet. Ray calls this insect the Gally-Worm marked with livid and white circles, found under large stones, and on old trees.

GALLY-WORM, RED. Ray denominates this

G A N

species the long Gally-Worm. It measures one inch and a half; the body is very slender, and of a reddish colour; the back and belly are depressed; and the feet are yellowish, of which there are seventy on each side.

Linnaeus mentions only three species of these insects; namely, that with seventy, that with a hundred, and that with a hundred and twenty feet on each side.

GAMBET, OR GAMBETTA. A bird somewhat resembling the common red-shank. The head, neck, and breast, are grey, and full of brown spots, which are largest on the back, and smallest on the head; the back is grey, a little inclining to a reddish brown colour on it's lower part, and on the wings; the belly is white; and the beak is black. This bird is common in Italy, and some other countries.

Pennant describes one of this species, the tringa Gambetta of Linnaeus, which was shot on the coast of Lincolnshire, and was about the size of the green-shank. The head, back, and breast, were of an ash-brown colour, spotted with dull yellow; the coverts of the wings and scapulars were cinereous edged with yellow; the primaries were dusky; the shaft of the first feather was white; the tail was dusky bordered with yellow; and the legs were yellow.

GAME, BLACK. See GROUSE.

GAME-COCK. See COCK.

GAME, RED. See GOR-COCK.

GAME, WHITE. See PTARMIGAN.

GANG-FISH. A name given by some authors to a small fish caught in the German lakes, and exported in pickle into many parts of the world; but more generally known by the appellation of Lavaretus. The Gang-Fish is a species of the coregonus; and, in the Ardeian system, is distinguished by the name of the coregonus with the upper jaw longest and flat, and with fourteen rays in the back-fin.

GANNET, the Pelicanus Bassanus of Linnaeus; called also the soland goose. This bird, which is about the size of the tame goose, weighs nearly seven pounds; and is upwards of three feet in length, and six in breadth. The bill is six inches long, and straight almost to the point, where it inclines downwards; and the sides are irregularly jagged, that the creature may hold it's prey with greater security. About an inch from the base of the upper mandible there is a sharp process, which projects forwards; a long furrow, reaching almost to the end of the bill, occupies the place of the nostrils; and the whole bill is of a dirty white tinged with ash-colour. The tongue is small, and placed low in the mouth; and a naked skin of a fine blue colour surrounds the eyes, which are a pale yellow, and full of vivacity, this bird being remarkable for the quickness of it's sight. From the angle of the mouth proceeds a narrow slip of black bare skin, extending to the hind-part of the head; beneath this skin there is another, which, like the pouch of the pelican, is dilatable, and of a sufficient size to contain five or six entire herrings, which, during the breeding season, it carries at once, to support it's mate and young. The neck is extremely long; the body is flat, and very full of feathers; the crown of the head, and a small space on the hind part of the neck, are buff coloured, and the rest of the plumage is white, except the bastard wing and the greater quill feathers, which are black. The legs and toes are black, but the fore part of both are marked with a blue.

G A N

a stripe of fine pea-green; and the tail is composed of twelve sharp-pointed feathers, the middlemost being the longest.

During their first year, these birds are of a dusky hue, speckled with numerous triangular white spots; and their colour strongly resembles that of the speckled diver.

Each Gannet, if not disturbed, will lay only one egg throughout the year; but if that be taken away, it will lay another, and then a third: a wise provision of nature to prevent the extinction of the species by accidents, and to supply the inhabitants of those places where they breed with food. The egg is white, and smaller than that of the common goose; but the nest is large, and composed of grass, sea-plants, or any other substances which the Gannet finds floating on the water.

As these birds subsist entirely on fish, they frequent those uninhabited islands where their food is found in plenty, and where they are undisturbed by the human race. The isle of Ailfa, in the firth of Clyde; the rocks adjacent to St. Kilda, a small island near the Orkneys; the Shelig islands, off the coast of Kerry in Ireland; and the Bass isle in the firth of Forth; seem to be their favourite resorts: but in the last-mentioned island they are seen in the greatest abundance. 'There is a small island,' says Dr. Harvey, 'called the Bass, not more than a mile in circumference. The surface is almost wholly covered, during the months of May and June, with their nests, their eggs, and their young: it is scarcely possible to walk without treading on them. The flocks of birds on the wing are so numerous, as to darken the air like a cloud; and their noise is such, that one cannot be heard without difficulty by the person next to him. When one looks down on the sea from the precipice, it's whole surface seems covered with infinite numbers of birds of different kinds, swimming and pursuing their prey. If, in sailing round the island, one surveys it's hanging cliffs, in every crag and fissure of the broken rocks may be seen innumerable birds, of various sorts and sizes, more than the stars of heaven when viewed in a serene night. If they are viewed at a distance, either receding or in the approach to the island, they seem like one vast swarm of bees.'

Nor are these fowls less frequent on the rocks of St. Kilda. Martin assures us, that the inhabitants of that small island annually consume near twenty-three thousand young birds of this species, besides an amazing quantity of their eggs: on these they principally subsist throughout the year; and, from the number of these visitants, make an estimate of their plenty for the season. They preserve both the eggs and the fowls in small pyramidal stone buildings, covering them with turf-ashes, to prevent the evaporation of their moisture. This, however, is dear-bought food, being earned at the hazard of their lives, either by climbing the most difficult and narrow paths, where, to appearance, they can scarcely cling, and that too at an amazing height over the raging sea; or else, being lowered down from above, they collect their annual provision hanging in the midway air, placing their sole dependence for safety on the uncertain footing of one person, who holds the rope by which they are suspended at the top of the precipice. The young of these birds constitute a favourite dish of the Scotch in general, and at L. although they are sold at one shilling and eight pence each, roasted, and served up as a whet, a little before dinner.

G A N

The Gannet is a bird of passage. It's first appearance in those islands is about the month of March; and it quits them either in August or September, according as the inhabitants take or leave it's first eggs. It's motions may generally be determined by the migrations of the immense shoals of herrings which at that season pour down through the British Channel, and supply all Europe. The Gannet assiduously attends the shoals in their passage, accompanies them in their whole circuit round our island, and shares with our fishermen in this exhaustless banquet. Wherever this fowl is seen, it is sure to announce the arrival of the finny tribe to the fishermen, who immediately prepare their nets, and take the herrings by millions at a draught.

The Gannet migrates as far south as the mouth of the Tagus in quest of food, being frequently seen off Lisbon during the month of December, plunging for sardines, fishes resembling (if not actually the same with) pilchards.

'I have observed, in Caithness,' says Pennant, 'their northern migrations in the month of August, and have seen them passing the whole day, in flocks from five to fifteen in each: in calm weather, they fly high; in storms, they fly low, and near the shore; but never cross over the land, even when a bay with promontories intervenes, but follow at an equal distance the course of the bay, and regularly double every cape. I have seen many of the parties make a sort of halt for the sake of fishing: they soared to a vast height; then darting headlong into the sea, made the water foam and spring up with the violence of their descent; after which they pursued their route. I enquired,' continues he, 'whether they were ever observed to return southward in the spring, but was answered in the negative; so it appears that they annually encircle the whole island.'

These birds are well known on most parts of our coasts. In Cornwall and Ireland, they are called Gannets; and, by the Welsh, Gan. Ray supposed the Cornish Gannet to be a species of large gull; being led into that mistake by constantly seeing the bird on the wing, when in reality it has the appearance of the gull.

Whether the Gannet breeds in any other parts of Europe except our own islands, is a question as yet undetermined. In America there are two species of birds belonging to this genus, which greatly resemble the common Gannet in their general conformation and manner of catching their prey.

The Gannet, with respect to quickness of sight, seems to exceed even the cormorant. It is possessed of a transparent membrane under the eyelid, with which it covers the whole eye at pleasure, without obscuring the sight in the smallest degree; and this seems a necessary provision for the security of the eyes of so weighty a creature, whose method of preying, like that of the cormorant, is by darting headlong into the water, from a height of one hundred feet or more, in order to seize it's prey.

This bird is sometimes taken at sea by fastening a pilchard to a board, which is left floating. The Gannet instantly descends on the wood, and is either killed or maimed by the shock of a body from which it expected no resistance. A bird of this kind, we are informed, flying over Penzance, in Cornwall, a few years ago, and seeing some pilchards lying on a fir plank in a cellar used for curing

G A S

ing fish, darted itself down with such violence, that it struck it's bill through the board, about an inch and a quarter thick, and dislocated it's neck.

GAPERS. A name given by authors to such shells as are denominated bivalves and chamæ.

GARAGAY. A rapacious Mexican bird of the size of the kite, the head and tips of the wings of which are white. It makes but short flights; and being fond of the eggs of tortoises and crocodiles, it explores those places where they are buried in the sand.

GARDON. A fish of the roach kind, supposed by many authors to be but little different from the common roach of the English rivers. Some call it the Gardon fargus, and cephalus; and others, leuciscus.

GARDUS. An appellation given by some writers to that species of cyprinus called by Gesner and others the fargus.

GAR-FISH. See *Esox* and *Acus*.

GARGENY; the *Anas Querquedula* of Linnæus. A fresh-water fowl of the duck kind, somewhat larger than the teal, but strongly resembling it in shape; and hence, in many places, it is called the summer-teal. The beak, legs, and feet, are of a deep lead-colour; the upper part of the head is dusky, but on each side there is a white streak, drawn from the eyes to the back part; the throat and the lower part of the neck are variegated with white and reddish brown; the breast is beautifully variegated with transverse undulated lines of black and dusky brown; and the belly is white or yellowish. The female is smaller than the male, and the colours on the head are less bright and beautiful. It has an obscure white mark over each eye; and the rest of the plumage is of a brownish ash-colour.

GARHANA. A large Brazilian fish of the shape of the common carp; more usually known among authors by it's Brazilian name, *acaraaya*.

GARNET. See *LIMPET*.

GARRULUS ARGENTORATENSIS. An appellation sometimes given to that species of magpie commonly called the roller; a very beautifully variegated bird, found in Italy and some other places.

GARRULUS BOHEMICUS; the Bohemian Magpie. A name given by some naturalists to the bird more usually called *ampelis*, from it's fondness for grapes.

GARTER-FISH; the *Lipidopus*. The body of this fish is shaped like a sword; the head is elongated; the fins which cover the gills have seven rays; and there are only three scales on the whole body, two in the place of ventral fins, and the third proceeding from the anus.

GASTEROSTEUS. The name of a genus of acanthopterygious fishes; the characters of which, according to the Artedean system, are these: the branchiostegæ membrane on each side contains three small and slender bones; the belly is almost entirely covered with bony scales; and the ventral fins have only two rays, one of which is prickly, and considerably larger than the other. There are three species of these fishes.

In the Linnæan system, this constitutes a genus of the thoracici, containing eleven species, which are distinguished by the number of their dorsal fins.

GASTEROSTEUS is a word of Greek origin, being derived from *Gaster*, the Belly, and *Osteon*,

G A Z

a Bone; the greater part of the belly of this fish being fortified with bony plates.

GATTORUGIN. A fish of the genus of blenni, called by Linnæus *blennius gattorugine*. It measures about seven inches and a half in length; the body is smooth and compressed on the sides; the belly is somewhat prominent; the teeth are slender, almost setaceous, and very close set; between the eyes there is a small cavity; and above each eye, just on the summit, there is a narrow loose membrane, trifurcated at the top, which distinguishes this fish from every other species. The pectoral fins, consisting of fourteen rays, are broad and rounded; the dorsal fin contains fourteen strong spiny rays, and nineteen soft ones; the anal fin has twenty-one rays; the extremities in every fin extend beyond their webs; and the tail, which is rounded at the end, consists of twelve rays, divided towards their points. This fish is generally of a dusky hue, transversely marked with wavy lines; the belly is of a light ash-colour; and the lower part of the pectoral fins, as well as the ends of the ventral, are orange-coloured.

GATTORUGIN, INDIAN. The back of this species is arched,, with a single fin running along it's middle from head to tail; and on the under-side it is hollowed or arched inwards. The teeth are extremely minute; the under-side of the head and the gills are marked with dusky roundish spots; the gills are pectinated on their edges; and behind them, on the under-side, are a pair of appendant strings, each of which parts into two, and terminates in points. A single fin rises about the middle of the belly, and extends to the tail; the tail-fin is rounded; and from each side, exactly behind the gills, proceeds an oblong fin; the lateral lines are broken into angles; the scales are so minute as not to be perceptible by the naked eye, but on the sides appear some indentions with wavy lines.

This fish is much compressed sideways, except about the head, where it is broader; and it's colour is a dull ferruginous.

GATVISCH. An American fish, a species of the turdus of wrasse, of a yellow colour, and beautifully variegated with red. It is generally known among authors by it's Brazilian name, *pira pixanga*.

GAVIAON. A Portuguese appellation for the caracara, a species of Brazilian hawk about the size of the common kite.

GAVILAN. The Spanish name of a species of hawk common in the Philippine Islands. It is somewhat larger than the sparrow-hawk; the back and wings are of a yellowish colour; and the belly is whitish. It is the most common of all predaceous birds in that part of the world, and is extremely voracious and mischievous.

GAVIOTA. The Portuguese name for an aquatic fowl of the gull kind found in Brazil, and called by the natives *guacu guacu*. It is about the size of the common hen; the beak is long, straight, and yellow; the head, tail, and part of the wings, are black; and the throat, breast, and belly, are white. The Gaviota deposits it's eggs in the sand, which are large, and esteemed wholesome food; but it's flesh is little valued.

GAYTICPUA. An American serpent, said to be found only in the kingdom of Razim. It grows to a vast size; and it's stink is so offensive, that no creature is able to approach it.

GAZA GIOVANE. A small species of heron.

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ron, of a fine white colour, called by some authors *ardea alba minor*, or the small white heron. It's weight is about a pound; the whole body is of a pure snow-white colour; the hind-part of the head is adorned with a short crest; round the eyes there is a naked space of a greenish hue; and the feet are green, but sometimes covered with blackish scales. It's flesh is commonly eaten in Italy; but the feathers which compose the crest of this beautiful bird are reckoned it's most valuable part.

GAZE-HOUND. See **HOUND**.

GAZELLA, GAZELLE, OR ANTELOPE.

In the Linnæan system, this constitutes a species of the capra, or goat; but other naturalists make it a distinct genus, the characters of which are these: the horns are annulated, or twisted; there are eight broad cutting-teeth in the lower jaw; and the body and limbs are of a light and elegant conformation. Thus the Gazelle is made an intermediate genus between the goat and the deer, agreeing with the former in the texture of it's horns, which contain a core, and are never shed; and with the latter, in the elegance of it's form and swiftness of it's motion. The Gazelle being one of the fleetest animals in nature, it's chase is esteemed a favourite diversion in all those parts of the world where it is found. Some species form herds of two or three thousand; while others keep in small troops of five or six. The varieties of this animal are numerous; but, excepting two or three, they all inhabit the warmest parts of the globe; their proper climates seem to be those within the torrid zone; nor can they exist in the colder regions. See **ANTELOPE**.

GAZZA. The Italian appellation for a species of heron common in several parts of Europe; and called by many authors *ardea alba major*, the greater white heron. The whole body is of a snowy white colour; the beak is yellow; the membranes about the eyes are green; the tail is long; and the head is destitute of a crest; which last circumstance, added to the disparity of size, sufficiently distinguishes it from the *ardea alba minor*. This bird, which is sometimes seen in England, has been mistaken for the common heron become accidentally white; a phenomenon frequently observed in sparrows, and some other birds.

GAZZETTA. A name given by Gesner to the *ardea alba minor* of naturalists, the *gaza giovane* of the Italians.

GAZZETTO. A fish of the *turdus* or wrasse kind, caught in the Mediterranean, and sold in the markets of Italy. It is thick, and pretty broad; the colour is a fine green; the fins are spotted; and near the anus there is a large purple tubercle. The dorsal fin of this fish consists of twenty-four ribs or nerves; the first fifteen of which are rigid and prickly, the rest being smooth and flexile.

GED. The English name for a small species of snipe, usually called the juddock; and, by authors, *gallinago minima*.

GELLY, SEA. A term by which naturalists express the asterias, or sea-star.

GENET. An animal of the weasel kind, rather smaller than the martin, though some are larger. It resembles the weasel kind in it's great length compared to it's height, in having a soft beautiful fur, in it's feet being armed with untractile claws, and in it's appetite for petty carnage; but it differs from them in having the nose much smaller and longer, the tail tapering to a point, larger ears, and smaller paws.

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The Genet is spotted with black, on a ground mixed with red and grey: it has two sorts of hair, the one shorter and softer, the other longer and stronger, but not more than half an inch long on any part of the body except the tail; it's spots are distinct and separate on the sides, but, uniting towards the back, there form black stripes which run longitudinally. There is also along the back a kind of longish hair, resembling a mane; and the tail is marked with rings, alternately black and white, from the insertion to the end. Like all the rest of the weasel kind, it is furnished with glands, which separate a kind of perfume resembling civet, but which soon evaporates: these glands open differently from those of other animals of this kind; for, as the latter have their apertures just at the beginning of the anus, the aperture of this creature is situated immediately under it.

Genets are easily domesticated. Belonius assures us, that he has seen some at Constantinople as tame as cats; and that they are permitted to run where they please, without doing any injury: hence they have been called the cats of Constantinople, though they have little else in common with these animals except their address in discovering and destroying vermin. Some naturalists pretend that they inhabit only moist grounds; and that they chiefly reside on the banks of rivers, avoiding mountainous and dry places; but, with respect to these local predilections, we are not competent to speak with certainty. Certain, however, it is, that the species is not much diffused: it is not to be found in any part of Europe, except Spain and Turkey; and though it requires a warm climate for it's subsistence and propagation, it has not been discovered in any of the warmer regions of India or Africa. It is a mild and tractable animal; beautiful in it's colours, and valuable for it's fur; and seems to be one of those creatures which, with proper care, might be propagated in any temperate climate.

GERBUA. An appellation sometimes given to the jerboa, an animal which inhabits Egypt, and some other countries. See **JERBOA**.

GERENDA. An East Indian serpent, finely spotted with various colours, to which the natives of Calicut pay divine honours; and, while their deity lies coiled up, (it's usual posture) they prostrate themselves before it with stupid adoration. The Gerenda is likewise worshipped in the same manner by the inhabitants of the coast of Mozambique in Africa.

The brilliancy of colouring in these reptiles, which probably procure them so much veneration among uncultivated nations; in countries where the principles of a just taste are established, would only excite disgust and aversion.

GER-FALCON, OR GYR-FALCON. This species of Falcon is naturally a very bold, wild, and untractable bird; but, when once reclaimed, it proves one of the most serviceable of the kind. See **FALCON**.

GHALGHULUNA. The Ceylonese name for a species of serpent of a pale brown colour variegated with transverse streaks of white, and found among rocks and stones.

GIAROLA. A bird of the lark kind, remarkable for it's very long heel. It is about the size of the common lark; the head, neck, back, and wings, are of a mottled colour, resembling that of the quail; the general appearance of the feathers is a chestnut brown, and their edges are variegated

with white, yellow, and red; the back-part of the head has a crown or ring of white feathers; the belly is also white; and the tail is short, bifid, and variegated with chesnut and white.

GIAROLO. The Italian name for a small bird of the snipe kind, remarkable for its white tail. It bears a strong resemblance to the bird called in England the stint; but its beak is broader at the base, and its legs are thicker and shorter. Aldrovandus gives it the appellation of the *Cinclus tertius*; a very indeterminate name, *Cinclus* being applied by different authors to several different birds.

GIBBON. An appellation given by Buffon to the long-armed ape, a very extraordinary creature, of different sizes, being frequently four feet high. It walks erect; it is destitute of a tail; its face resembles that of a man; its eyes are large, and sunk in its head; and its ears are exactly proportioned. But it differs from all others of the monkey kind in the remarkable length of its arms, which, when the animal stands erect, are long enough to reach the ground; so that it can walk on all-fours, and yet retain its erect posture.

Next to the ourang outang, this animal most nearly resembles mankind, not only in its figure, but also in the gentleness of its manners and the docility of its disposition. It is a native of the East Indies, and particularly of the coasts of Coromandel.

GIBBOUS FISH. A name given by Ray to the fish called kromrugh by the Dutch. It is smooth, and without scales; the belly is white; the fins and tail are black; and it grows to a considerable size, sometimes to four feet. This fish, which is caught in the Oriental Seas, near the shores, is esteemed very delicious food. It receives its name from a remarkable prominence on its back, like that of the perch, but considerably higher.

GID, OR GED. A small bird of the snipe kind, called also the judcock. See **SNIFE**.

GILT-HEAD. In the Linnæan system, this fish is a species of the sparus, called by that great naturalist *sparus lunulâ aurea inter oculos*. It is of a broad figure, compressed on the sides, and somewhat resembles the bream. It grows to the weight of ten pounds; and is caught in great plenty, during the summer months, in different parts of the Mediterranean. The back is sharp, and of a dusky green colour; between the eyes there is an arched stripe, resembling a crescent of a gold colour, the horns of which point towards the head, and from this semilunar gold-coloured spot the Gilt-Head receives its name. It has usually a black spot at the upper angle of the cover of the gills, and another of a purple colour below them; the teeth in each jaw are oblong and roundish; the tail is extremely forked; the dorsal fin, which extends almost the whole length of the back, consists of twenty-four rays; the pectoral fins consist of seventeen rays, the ventral of six, and the anal of fourteen.

The Gilt-Head is one of the pisces sexatiles, or fishes which haunt deep waters, or bold rocky shores. It feeds principally on shell-fish, which it comminutes with its teeth before it swallows them. Its flesh is reckoned extremely coarse; and was little esteemed by the ancient Romans, except when the creature had fed on the Lucrine oyster.

GILT-HEAD, RED. This species is about the same size as the former; its shape is not very different; but its whole body is of a red colour. At

the base of the pectoral fins there is a ferruginous spot; the scales are large; and the tail is forked.

GILT-HEAD, TOOTHED. This species grows to the length of twenty-six inches, and ten in breadth; its general conformation resembles that of the roach; and its eyes are large like those of quadrupeds. In the lower jaw there are two rows of slender, sharp teeth, and on each side a slender canine tooth; the upper jaw is furnished with only one row of teeth; the apertures of the gills are very large; and the body is scaly. A single fin extends down the centre of the back almost to the tail; the first seven rays are high, and the rest low; behind the vent there is another corresponding fin; and both are entirely covered with scales, laid over each other. The back is black; the sides are somewhat brighter; and the belly exhibits a silvery brightness.

GIMMERO. An animal said to be bred between the ass and the bull. The generality of naturalists deny the possibility of this mixture; while the natives of the Alpine countries, where this creature is found, as strongly insist on its reality.

GINETTA, OR GENETTA; the Viverra Genetta of Linnæus. A small animal of the weasel kind, of a tawny red colour, ornamented with several black spots in different parts of its body, and having the ridge of its back marked with a black line. See **GENET**.

GIRAFFE. - An appellation sometimes given to that very singular animal more commonly known by the name of the camelopard. See **CAMELOPARD**.

GIRROCK. The common English name of the fish called the lacertus; a large species of gar-fish, caught in the Mediterranean, the British, and other seas.

GLADIUS PISCIS. An appellation given by many authors to the sword-fish; called also *xiphias*.

GLAMA. A name sometimes given to the llama, an animal of the camel kind; called also *elapho camelus*. See **LLAMA**.

GLANIS. An appellation given by some naturalists to the fish called in Latin *silurus*; and, in English, the sheat-fish.

GLANS MARINUS. A genus of shell-fish, more commonly called *balanus*; and, in English, the centre-shell.

GLANUS, OR GLANIS. An appellation given by Pliny, and other ancient writers, to that species of the *silurus* called in English the sheat-fish; and distinguished in the Artedean system by the name of the *silurus* with four beards on the chin.

GLAREFANA. A bird described by Gesner, and generally supposed to be the *spipoletta*, a species of lark; called also *tordino* by the Venetians.

GLAUCUS. The name of a genus of fishes which, according to Rondoletius, comprehends three species. The first, or more common kind, is a broad fish approaching to the figure of the turbot, but very thin: the colour on the back and sides is a dusky olive; on the belly, white; and on each side appear a few black spots. The scales are small and rounded; the mouth is large, and internally tinged with blue, the teeth being small; and the tail is extremely large, and forked, the tips of the forks being varied with black. This species is commonly caught in the Mediterranean.

The second species is nearly of the same figure

G L O

as the former, but of a smaller size, and therefore called by some naturalists *glaucidium*. This fish has an undulated line running on each side from the membrane of the gills to the middle of the body, from whence it is continued straight to the tail; whereas, in the common *Glaucus*, this line preserves one unvarying direction.

The third species differs from the other two in having very strong and sharp teeth, and in the lateral line being much more waved: above this line the fish is of a deep blueish black colour; and, below it, perfectly white.

GLEAD. A provincial appellation for the *milvus*, or kite.

GLINUS. A name by which Belonius, and some other writers, have called the small sea-fish more generally known by that of *dracunculus*.

GLIS. In a limited sense, this word only signifies the dormouse; but, according to the acceptance of Linnæus, the *Glires* constitute the fourth order of the mammalia class of animals. The characters of the creatures belonging to this class are the following: they have only two fore-teeth in each jaw; they are destitute of the *dentes canini*, or dog-teeth; and the feet have toes, and are formed for leaping. Animals of this class comprehend the several species of the porcupine, the hare, the squirrel, the beaver, the mouse, and the bat.

GLIS VOLANS, the Flying Dormouse. The name of an animal properly of the *vespertilio* or bat kind; distinguished by Linnæus under the appellation of the *spasma*, or *vespertilio ecaudatus*, *nafo foliato obcordato*.

GLISSA. A sea-fish of the tunny kind; but it's skin is perfectly smooth, and free from scales: it usually grows to the length of two cubits, and the thickness of a man's body; it is of a roundish figure; the jaws are very rough, but destitute of teeth; and the tail is forked, but less arched or lunated than that of the tunny. This fish is found in deep water, at a considerable distance from shore; and it's flesh is esteemed very delicate food.

GLOBE ANIMALCULE. This very singular, minute, aquatic animal, whose shape seems to be exactly globular, without either head, tail, or fins, was first discovered by the ingenious Baker, in his microscopical experiments. It moves in all directions, either rolling like a bowl, or gliding along smoothly without any convolutions. It's whole body is transparent, except where it is covered with circular black spots, which in different animalcules are found differing in their numbers; and these spots are probably either the eggs or the young. The general appearance of the body of this insect exhibits a kind of short moveable hairs or bristles, by means of which it is extremely probable that it's motions are performed.

GLOBE-FISH. The name by which some species of the *ostracion* are distinguished. See *OSTRACION*.

GLOBOSÆ CONCIÆ. A family of shells, more generally called tuns: the characters of which are; that their bodies are greatly swelled or rounded, from which circumstance they acquire the name of *Globosæ*, or tuns; that they have short turbans; that their mouths are extremely palatous; and that they are destitute of pillar or columella lips. The shells which belong to this family are the tuns, partridges, figs, harps, Persian crowns, and melons.

GLOTTIS. A name given by many naturalists to a bird of the long-legged kind approach-

G L O

ing to the figure of the red-shank, but larger and longer legged, and generally known by the appellation of *limosa*.

GLOW-WORM. A genus of insects of the order of *coleoptera*; the antennæ of which are setaceous; the jaws are prominent, and dentated; the eyes are slightly prominent; and the thorax is of a roundish, marginated figure.

The terms *Cantharis* and *Cicindela* have been indiscriminately applied to the Glow-Worm; but, in fact, they form two distinct genera of the same order, comprehending several species in the Linnæan system. The *cantharis* has setaceous antennæ; the thorax is marginated, and shorter than the head; the exterior wings are flexible; and the sides of the abdomen are plicated and papillose. In most species, the thorax is depressed; but, in some, it is roundish. Linnæus enumerates twenty-six species of this genus.

The same author reckons fourteen species of the *cicindela*, distinguished by their colours and the spots on their exterior wings: thus, the field, or green Glow-Worm, has five white spots on it's exterior wings; the black Glow-Worm, which frequents woody places, has two; the braffy Glow-Worm, commonly found in moist places, has broad excavated spots on the wings; and the black Glow-Worm, with a round thorax, common in rocky places, has two ferruginous spots on these wings.

No two insects differ more from each other than the male and female Glow-Worms. The male is furnished with wings, and is a small fly; whereas the female is destitute of wings, and continues a large crawling Worm. The body of the male is oblong, and somewhat depressed; the wings are shorter than the body; the head is broad, dun, and flat; and the eyes are large and black: this insect is by no means luminous, and therefore is not generally supposed to have any affinity to the Glow-Worm. The female is what is expressly called by this name: this is a very slow-paced animal, without wings, and in it's general conformation somewhat resembling a caterpillar; the head is small, flat, hard, black, and acuminate towards the mouth; the antennæ are short; the legs, which are six in number, are moderately long; the body is flat, and composed of twelve rings, whereas that of the male consists only of five; and the colour is dusky, with a streak of white running down the back. In the day-time it exhibits none of it's distinguishing qualities; but, in the night, it becomes perfectly conspicuous by the glowing light, or lambent flame, that is seen near it's tail, issuing from the under-part of it's body.

The common Glow-Worm, which so often presents itself to our curiosity during the summer months, if carefully taken up, may be kept alive many days on fresh turfs; and will constantly exhibit it's luminous appearance in the dark.

The Glow-Worm is a sluggish, inactive insect, having, to appearance, no signs of life in the day-time, when it's light is not perceptible, though carried into a darkened room, unless the creature is turned on it's back, and put into motion; and, even then, it is but very faint: but, after sun-set, the light begins to return, and with it the life and motion of the animal. Indeed, the motion and light of the Glow-Worm seem mutually dependent on each other: it never shines but when it's body is in some degree of motion; and, when it is most strongly luminous, it's body is elongated a third more

more than in the day-time. During it's most lucid periods, it will sometimes suddenly turn it's body round, and then the light will appear confined to a space not larger than the head of a pin; but, on being touched, it will immediately extend itself, and the light will become as large and bright as before.

This insect, taken in gross, is used in medicine, and thought to be serviceable in the stone: and Cardan ascribes to it an anodyne virtue.

GLOW-WORM, WINGED. This insect has been well described by Aldrovandus, who asserts that it lays eggs which are hatched into small Worms; and that these in time become flies, after undergoing the usual transformations. Mouffett and Bartholine describe this animal nearly in the same manner; but they allow only the male to have wings; while Scaliger, who contradicts this opinion, tells us that he has caught both males and females winged in the act of generation. This seems to be an evident proof that both sexes are winged: nevertheless, those who have quoted this passage, seem unconvinced of the truth of the assertion. Waller, however, who gives an account of these flies in the Philosophical Transactions, observed them in the same manner, in the act of copulation, both winged, and with no other difference between them except that the female was the largest of the two; a common case with respect to many other insects.

During the warmer months, this creature is sometimes caught in houses, flying towards the flame of a candle; and, when examined in the dark, it appears to be partially luminous. Before it is furnished with wings, it is frequently found in the shape of the common Glow-Worm; and then it always emits a kind of lambent flame. Both the male and the female, in their winged state, shine during the summer months; and their light is sometimes so vivid, that it is perceptible even when there is a candle in the room. It's vibrations are irregular, and it's colour is greenish. The luminous parts consist of two small specks under the tail, in which the light continues for some time after the tail is cut off, but gradually expires. The use of this light seems to be that of directing the animal in it's course, and assisting it in catching it's prey; to which purposes it appears admirably placed, the tail being easily bent under the belly, and then the light is thrown full on any surrounding object: this light the creature can conceal at pleasure, and by that means frequently escapes when pursued by it's enemies.

The Winged Glow-Worm, which is of the beetle kind, is of a brown and dusky colour: it is furnished with hard or shelly wings, like other beetles; and, when these are expanded, a pair of very large membranaceous ones is disclosed to view. The head is covered with a sort of shield; and under it the eyes are placed, which are black, large, and moveable; so that the creature can occasionally thrust them forwards: there are two hairy antennæ; and the legs are, like those of the common fly, hard, shelly, and hairy.

GLUTTON; the *Mustela Gulo* of Linnæus. No precise description of this quadruped has hitherto come under our observation; some authors comparing it to the badger, others to the fox, some to the bear, and others to the hyæna. Linnæus ranks it among weasels, from the similitude of their teeth; though the length of it's body, the shortness of it's legs, the softness of it's fur, it's

disagreeable scent, and it's insatiable appetite, seem to form stronger lines of affinity between these animals. Klein, who described a creature of this kind brought alive from Siberia, assures us, that it was about three feet long, and one foot and a half high. On comparing these dimensions with those of the weasel tribe, we shall find that they approach more nearly to the class just mentioned than any other. In the conformation of it's nose, ears, teeth, and long bushy tail, the Glutton entirely resembles the weasel; and, as to it's superior thickness and corpulence, they very naturally arise from it's insatiable voracity, which is so remarkable, that from that circumstance the animal receives it's name.

The Glutton is found in the northern parts of Europe and Siberia, as well as in those of America, where it is called the carcajou. It's body is long and thick; it's legs are short; along the back it is of a black colour, but it's sides are a reddish brown. It's fur is held in the highest estimation on account of it's softness and beautiful gloss; it's tail is pretty long and bushy; it's legs and claws are better adapted for climbing trees than running along the ground; and, consequently, it catches it's prey rather by surprize than pursuit.

Indeed, scarcely any of the long-bodied animals trust to their speed: knowing their own incapacity to overtake their prey through celerity, they either creep upon it in it's retreats, or lie in ambush, and seize it with a bound. The Glutton, from the conformation of it's legs and the length of it's body, must necessarily be extremely slow; and, consequently, it's only resource consists in taking it's prey by surprize. All the rest of the weasel kind, from the smallness of their size, are better adapted for a life of insidious rapine than this; they are qualified to pursue their prey to it's retreats; they can lurk unseen among the branches of trees, and hide themselves with facility under the leaves. But the size of the Glutton prevents it from gaining admission where other animals can retire; and, for the same reason, it with more difficulty lurks unseen: hence, it's only resource is that of climbing a tree, which it effects with ease; and there it waits with patience till some large animal passes underneath, on which it suddenly darts with unerring aim, and seldom fails to conquer.

In North America, this voracious creature is frequently seen lurking among the thick branches of trees, purposely to surprize the deer, with which the extensive forests of that quarter of the globe abound. Endued with a degree of patience equal to it's rapacity, the Glutton singles out such trees as are marked by the teeth or antlers of the deer, and sometimes watches, in silent expectation, for several days together. If it finds that these animals either cautiously avoid the place, or have forsaken that part of the country, it then desists with reluctance, pursues the beaver to it's retreat, or even commits itself to the liquid element in quest of fishes. But should it happen that, by long attention, and keeping close, at last the elk or reindeer should fall into the ambuscade, the famished Glutton darts down upon the hapless animal, and sticks it's claws between it's shoulders, where they remain unalterably fixed. In vain does the large, but timid victim, encrease it's speed, or threaten with it's branching horns; the Glutton remains constantly in possession of it's prize, eats through the neck, and at last rends the large blood-vessels which are situated in that part.

Travellers.

Travellers, when crossing those deserted forests, frequently observe pieces of the skin of the Glutton sticking to such trees against which it has been rubbed by the deer in it's flight. But as this animal's voracity is greater than it's feelings, it never seizes without subduing it's prey. When, therefore, the deer, wounded, and faint with the loss of blood, submits to it's fate, the Glutton compensates for it's former abstinence by it's present voracity.

It is really astonishing to consider how much one of these animals is capable of eating at one time. That which Klein saw, though deprived of both air and exercise, taken from it's native climate, and labouring under ill health in consequence of these changes, nevertheless devoured thirteen pounds of flesh every day, and yet remained unsatisfied. It may thence be easily imagined how much more it would have devoured at once, after a long fast, of food congenial to it's appetites, and in that climate most natural to it's constitution: and we are accordingly informed, that, from being a lank, thin animal, it's natural figure, it then eats such immoderate quantities, that it's belly is distended, and it's whole shape in a great measure altered. Having enjoyed this voracious repast, it becomes incapable of any animal function, lying in a state of torpidity close to the animal it has killed; and in this situation it continues for two or three days. Being thus reduced to a state both loathsome and helpless, it derives it's chief protection from it's horrid stench, which few animals dare to approach; and for this reason it is enabled to continue eating and sleeping alternately till it's prey is wholly consumed; and then it ascends some tree in order to look out for fresh adventures.

Like many others of the weasel tribe, the Glutton seems to prefer the most putrid flesh to that newly killed; and, were it's swiftness and strength equal to it's rapacity, it would soon thin the forest of every other living creature. But, fortunately for it's fellow quadrupeds, this animal is so slow, that the beaver alone is inferior to it in speed: this creature, therefore, it frequently pursues on land; but the beaver generally makes good it's retreat, by taking to the water, in which element the Glutton can by no means exist.

A life of necessity is generally productive of fertile invention: and accordingly the Glutton, continually pressed by the calls of hunger, and possessing neither swiftness nor activity to gratify that appetite, is obliged by stratagem to make up for the defects of nature. It often examines the traps and snares laid for other animals, in order to anticipate the fowler. It is said to practise various arts, in order to procure it's prey; to steal on the rein-deer in their retreats; to lie in wait for such animals as have been maimed by the hunters; to pursue the ibatis while providing for it's own wants; and, when that animal has run down it's prey, to seize on it, and even sometimes to devour the original provider. When every other expedient fails, the Glutton condescends to search out graves; and, after digging up and feeding on the inhumed bodies, devours the very bones. For these reasons this carnivorous animal is held in utter detestation by the natives of those countries it inhabits, who usually term it the vulture of quadrupeds. But, though thus obnoxious and disgusting to man, these creatures do not seem at all to dread him; for, according to Gamelin, one of

them advanced boldly and calmly to a situation where several persons were at work, without betraying the smallest apprehension, or attempting to run away, till it had received several blows, which at last totally disabled it.

The Glutton, like all the rest of it's kind, is a solitary animal; and is never seen in company, except with the female, with which it couples in the middle of winter. The latter goes with young about four months, and brings forth two or three at a time.

Gluttons burrow in holes like weasels: the male and female are generally seen together; and both are equally resolute in defence of their young. On such occasions the boldest dogs are afraid to approach them, as they fight with the greatest obstinacy, and bite with the utmost severity: however, as they are unable to escape by flight, the hunters generally come up to the assistance of the dogs, and easily overpower them. Their flesh, as may easily be supposed, is not very delicate, but their skins amply recompense the hunters for their toil and danger. Their furs possess the most beautiful lustre imaginable; and are preferred before all others, except those of the Siberian fox and the sable.

GNAPHEUS. An appellation given by Athenæus, and other Greek writers, to the tench.

GNAT. A genus of the order of diptera, or two-winged insects, whose mouths are furnished with bristly stings, included in flexile sheaths.

Gnats proceed from little worms usually found at the bottoms of stagnant waters. The manner in which these insects lay their eggs is peculiarly curious and interesting: after having deposited a proper number on the surface of the water, they surround them with a kind of unctuous matter, which prevents their sinking; but, at the same time, connects them to the bottom by threads, to prevent their floating away at the mercy of every breeze. Thus these insects, in their egg state, resemble buoys fixed by anchors. As they approach towards maturity, they sink deeper; and at last, when they leave the eggs, and become worms, they creep at the bottom. After this, they form lodgings of cement, which they affix to some solid bodies at the very bottom of the water, unless they accidentally meet with pieces of chalk, which, being of a soft and pliant nature, give them an opportunity of sinking retreats for themselves, where the claws of cray-fish only can molest them. The worm afterwards changes it's form: it appears with a large head; and a tail invested with hair, and moistened with an oleaginous fluid, which serves to sustain it's body, and to transport it from one place to another. When the oil with which the tail is moistened begins to grow dry, the insect discharges an unctuous humour from it's mouth, which it sheds over it's tail; and, by virtue of this, it is enabled to transport itself from place to place without being incommoded by the water. The Gnat, in it's second state, is, properly speaking, a kind of nymph, which is it's introduction into a new state of being. In the first place, it divests itself of it's second skin; in the next, it resigns it's eyes, it's antennæ, and it's tail; and, in short, it seems actually to expire. However, from the remains of the amphibious animal a little winged insect arises, active in a high degree, and whose whole structure is a just object of our admiration: it's little head is adorned with a plume of feathers; and it's whole body is invested with

scales and hair, in order to secure it from the inclemency of the weather; and it makes trial of the activity of it's wings, by rubbing them either against it's body, or it's broad side-bags, which keep it in equilibrium.

But no part of this insect is more remarkable, or of more importance, than it's trunk, which may justly be deemed one of nature's master-pieces; and is so very small, that it's extremity can scarcely be discerned by the assistance of the best microscope that can be procured. That part which is at first obvious to the eye, is only a long scaly sheath under the throat: at the distance of near two-thirds of it's length, there is an aperture through which the animal darts out four stings, and afterwards retracts them; one of which, however sharp and active it may be, is no other than the case that contains the other three, for whose reception it is furnished with a long groove. These stings are sharpened on both sides; they are likewise barbed; and have a vast number of cutting-teeth towards their points, which are reverted, and fine beyond expression. When all these darts are thrust into the flesh of animals, sometimes one after another, and at others all at once, the blood and humours of the adjacent parts are unavoidably extravasated; on which tumours ensue, whose little orifices are soon closed up by the compression of the external air.

When the Gnat, by means of the extremity of it's case, which it uses instead of a tongue, has tasted any fruit, flesh, or juice, that it has discovered; if it be a fluid, it is sucked up without the protrusion of the darts; but, in case the least resistance is made by the obstruction of flesh, or other hard substances, the insect exerts it's strength, and penetrates it if possible with it's weapons. This being achieved, it draws it's stings into their sheath, which is applied to the wound, in order to extract, as through a reed, the juices which are therein inclosed.

But though the Gnat is very active and troublesome in the summer months, during winter it ceases to receive any food; and spends all that tedious season either in quarries or caverns, which, at the return of summer, are abandoned for some commodious ford, or stagnant water, where it may produce it's kind. Indeed, the young brood is sometimes so numerous, that the very water is tinged, according to the colour of the species, which is very various, and in general very beautiful.

Nothing, however, is more curious in the history of this animalcule, than it's method of propagation. Though all insects of the Gnat kind are pretty similar in their conformation and general appearance, they differ widely from each other in the manner in which they are produced: for some are viviparous, others oviparous; some are males, and unite with the females; others are females, requiring the impregnation of the males; and some, though of neither sex, produce young without any copulation or contact whatever. This is indeed one of the greatest irregularities in the history of nature; but it is nevertheless true. A Gnat, separated from the rest of it's kind, and inclosed in a glass vessel, with air sufficient to keep it alive, will produce young; which also, when separated from each other, will be the parents of a numerous progeny. Thus, through five or six generations, will these extraordinary animals propagate without the aid of copulation, and without any congress between the males and females; but,

after the manner of vegetables, the young bursting from the bodies of their parents without any previous impregnation. At the sixth generation, however, the propagation is suspended; the Gnat no longer produces it's like from itself alone, but requires the access of the male to give it another succession of fecundity.

The European Gnats give the human species but little molestation; they are sometimes, indeed, heard humming about our beds in the night-time, and retard the approaches of sleep by the apprehensions which they naturally excite: but the case is very different in the less populous and cultivated regions of America, where the waters stagnate, the climate is warm, and where they are produced in inconceivable multitudes. There the whole atmosphere is frequently filled with clouds of those famished insects, of different sizes, from the length of six inches, to a minuteness only discernible by the assistance of the microscope. The ardour of the meridian sun is too potent for their constitutions, and they therefore shun his influence: but when the evening shades prevail, neither artifice nor flight can possibly shield the wretched inhabitants from their attacks; for, though myriads are destroyed, myriads more constantly succeed them, and produce unceasing annoyance. The native Indians, who anoint their bodies with oil, and are from their infancy habituated to the depredations of these creatures, find them far less troublesome than those persons who are but newly arrived from Europe: the former sleep in their cottages having their bodies almost entirely covered with these insects, and enjoy, notwithstanding, uninterrupted repose; while the latter are almost driven to distraction, neither remaining quiet by day, nor sleeping by night.

The numbers of species of the Gnat kind, including the larger and smaller ones, are beyond the art of the most skilful naturalist to enumerate. Derham observed near forty different species in the vicinity of Upminster in Essex; but those which arrive at a size capable of being remarked with the naked eye are by no means innumerable. All the Gnat tribe have a long cylindric body, composed of eight wings; the corselet is short, but large, in proportion to the size of the fly; and to this member are affixed six legs, the wings, and the balancers: four stigmata are also found in this part, as is the case in other flies; the two first of which are placed near the head, and have sometimes been mistaken for ears.

Linnaeus describes the six subsequent species.

GNAT, DUSKY, with a forked snout. This species is ash-coloured, and moderately large: it has no points on the wings; and from between the jaws, or more properly from the trunk, proceeds a forked dart. Ray supposes this to be the female of the domestic tipula, because it neither bites nor stings.

GNAT, ASH-COLOURED, with eight rings on the body. This is the common Gnat, which is seen in almost every country; and is too well known to require any farther description.

GNAT, with water-coloured wings, marked with three black spots. This species is by some authors called the least Gnat with blackish spots. the body is of a brownish colour, and no bigger than a small flea; and the wings are white, narrow, and marked on their exterior edges with three dark specks.

GNAT, BLACK, with water-coloured wings, black feet, and a white ring. This species abounds

in Lapland, where they make a prodigious humming in the dusk of the evening. They bite with great severity, generally attacking the eyes, mouth, and face; and are not easily deterred, notwithstanding the minuteness of their size, which does not exceed that of a flea.

GNAT, Downy, with wings partly dusky. This variety is found in gardens, where they fly unceasingly, and seem to delight in the smell of flowers. Ray calls this the Gnat shaped like the silkworm moth, all over setaceous and black, with the hinder part of the body blunt, and red sides.

GNAT, BLACK, with a dusky body and a white forehead. In the Transactions of Upsal, this species is called the least blood-sucking fly with white wings. It is extremely troublesome to horses in the summer season, getting under their hair, and extracting their blood. The feelers resemble threads, though the insect is shaped like a fly; the head, feet, and breast, are black, except that the sides of the latter are ash-coloured, and that there is a white spot above and below the eyes.

GO. An appellation given by some authors to the common rock-fish, or sea-gudgeon.

GOAT. In the Linnæan system of zoology, the Goat makes a distinct genus of the order of pecora: the distinguishing characters of which are; that the horns are hollow, turned upwards, and annulated on their surfaces; that there are eight cutting-teeth in the lower jaw, and none in the upper; and that the male is generally bearded.

The Goat is one of those domestic animals whose value is overlooked, because the sheep so far exceeds it: thus the ass is of little consequence, because the horse supplies its place. Were the horse or the sheep removed from nature, the ass and the Goat would be invaluable; and the same arts would immediately be bestowed in cultivating and improving their kinds, that the higher orders of animals experience. But, in their present neglected state, they vary little from the wild animals of the same kind: man has left them their primitive habits and forms; and, the less they are indebted to his assiduity, the more they receive from nature.

The Goat, viewed in every possible light, seems better adapted for a life of savage liberty than the sheep. It is naturally more lively, and possessed of more animal instinct; it more readily attaches itself to man, and appears sensible of his caresses: it is also stronger, swifter, more courageous, more playful, and more capricious and vagrant, than the sheep; it is with difficulty confined to a flock; it chuses its own pastures; and loves to stray from its companions. It is fond of climbing precipices; it delights in approaching the very brink of danger; and it is often seen suspended on an eminence overhanging the sea, and even to sleep in that situation in perfect security. Nature, indeed, has in some measure fitted this animal for traversing these declivities with ease: its hoofs are hollow underneath, and their edges sharp; so that it can walk on the ridge of a house with as much facility as on level ground. When two Goats are yoked together, as is frequently practised, they will, as if by consent, take the most hazardous leaps, and yet so well time their mutual efforts, that they will rarely miscarry in the attempt.

As Goats are hardy creatures, and very easily sustained, they are for that reason chiefly the property of the poor, who have no pastures to supply more

delicate animals. They prefer the neglected wilds to the cultivated fields of art; they chuse the heathy mountains, or the shrubby rocks; the tops of the boughs, or the tender bark of young trees, are their favourite food; they bear immoderate heat much better than sheep; and are neither terrified at a storm, nor incommoded by rain; seeming only affected by immoderate cold, which produces the vertigo, a disease often fatal to these animals. The inconstancy of their nature is perceivable in the irregularity of their gait; they go forward, stop, turn, approach, and fly, merely from caprice and the extreme vivacity of their dispositions.

The Goat produces but two or three at a time; and though it degenerates in warm climates, and is much smaller, it nevertheless becomes more fruitful, and generally brings forth three, four, or even five, at a single delivery. The buck is capable of procreating its kind at the age of twelve months, and the female at that of seven: however, the fruits of this premature generation are weak and defective; and their best breeding time is generally delayed till the age of two years. One buck is sufficient for a hundred and fifty goats: his appetites are excessive; but this ardour brings on a speedy decay, so that he is enervated in four years at most, and even becomes old before he arrives at seven. The Goat, in some places, bears twice a year; and, like the sheep, continues five months with young.

The milk of the Goat is sweet, nutritive, and medicinal; less liable to coagulate on the stomach than that of the cow, and therefore preferable when the digestion is weak. The peculiarity of this animal's food communicates a flavour to its milk different from that of the sheep or the cow; for as it generally feeds on shrubby pastures and heathy mountains, there is a particular taste in its milk which is very grateful to such as are fond of that aliment.

In several parts of Ireland, and the Highlands of Scotland, Goats constitute the chief possessions of the natives. On those mountains where no other animals could subsist, these creatures glean a sufficient maintenance, and supply the hardy inhabitants with a varied luxury. Their beds are made of Goats skins, which are soft, clean, and wholesome; they feast on their milk, and convert one part of it into butter, and another into cheese: their flesh, however, is a delicacy they seldom taste, it being reckoned too expensive. The kid is considered, even by the epicure, as a dainty; and the flesh of the Goat, when properly prepared, is preferred by some to venison.

Thus, even in the wildest solitudes, the poor experience comforts of which the rich have not been cruel enough to dispossess them. In those mountainous retreats, where the landscape presents only a scene of rocks, heaths, and shrubs, that proclaim the wretchedness of the soil, these simple people have their feasts and their enjoyments: their trusty flocks of Goats attend them in those awful solitudes, and furnish them with all the necessities of life; while their remote situation happily keeps them ignorant of greater luxuries.

Goats are found in almost every part of the world, and seem suited to the necessities of mankind in both extremes: they are fattened in the same manner as sheep; but, notwithstanding every possible precaution, their flesh is neither so good nor so sweet, in our climates, as mutton. But, between the tropics, the case is very different; the
mutton

mutton there becomes flabby and lean; while the flesh of the Goat seems rather to improve; and, in some places, the latter is much preferred to the former.

Goats are so injurious to young plantations, that it would be imprudent to draw them from their beloved rocks, unless some method could be contrived of preventing them from cropping the tender boughs, or tearing the bark from young trees. Pennant informs us, that a gentleman of Merionethshire broke the teeth of his Goats short off with pincers, in order to preserve his trees: but this cruel policy ought not to be recommended; especially when those animals are preserved for the sake of their milk, the salubrity of which, it is supposed, arises principally from their promiscuous feeding.

The Goat, in various instances, contributes to the necessities of human life. From it's hair, perukes, and even cloth, are made; it's skin is useful for a variety of purposes; it's horns are manufactured into handles for various instruments; and it's suet is in great esteem for making candles, which are far superior in whiteness and durability to those made from that of the sheep, or the ox, and consequently bring a better price. The value of it's flesh and milk is well known; the latter being esteemed an excellent succedaneum for asses milk. In many of the mountainous parts of Scotland and Ireland, this milk is turned into whey, and has been surprizingly efficacious in those complaints where coolers and restoratives are necessary. Patients resort to many of those places during the proper season; and, from the combined aids of this salutary and innocent medicine, pure air, and exercise, they frequently experience a return of health, and a renovation of constitution, when all other expedients prove abortive.

The rutting-season of Goats is from the beginning of September till November: their excessive venery is a bar to their longevity; and accordingly they seldom live beyond their twelfth year.

Goats were held in great veneration by the inhabitants of Mendes, in Egypt; and the natives of that country in general never offered them in sacrifice, because their god Pan was represented with the feet and legs of a Goat. Under the symbol of this animal, they imagined that they worshipped the principle of the fertility of all nature, expressed by that divinity. However, among the Greeks, Goats were sacrificed, on account of their destroying their vines. Venus used frequently to ride on a Goat. The popular Venus, says Pausanias, is represented as mounted on a Goat; and the marine Venus riding through the waves on a Sea-Goat.

GOAT, DOMESTIC. The horns of the tame Goat, which have a curvature outwards towards their extremities, have been found to measure three feet five inches in length, and three feet two inches between tip and tip. The colour varies extremely; and the hair, in some, is long and rough; but, in others, smooth and short.

The tame Goat inhabits most parts of the world, either natively, or naturalized. It endures all kinds of weather; and is found in Europe as high as Wardhus in Norway, where it feeds, during the winter season, on moss, the bark of fir-trees, and even of logs intended for fuel; and it thrives equally well in the hottest parts of Africa, in India, and the Oriental Islands. The Goat, however, is not a native of the New World, having been introduced there by the original discoverers of

that continent; for the Americans were unacquainted with all domestic animals, sheep, goats, hogs, cows, and horses. The increase of these creatures in all parts of that continent, especially it's southern division, is really prodigious. But, in the rigorous climate of Canada, the Goat is too delicate to perpetuate it's race; for which reason new supplies are annually imported, in order to prevent it's extinction.

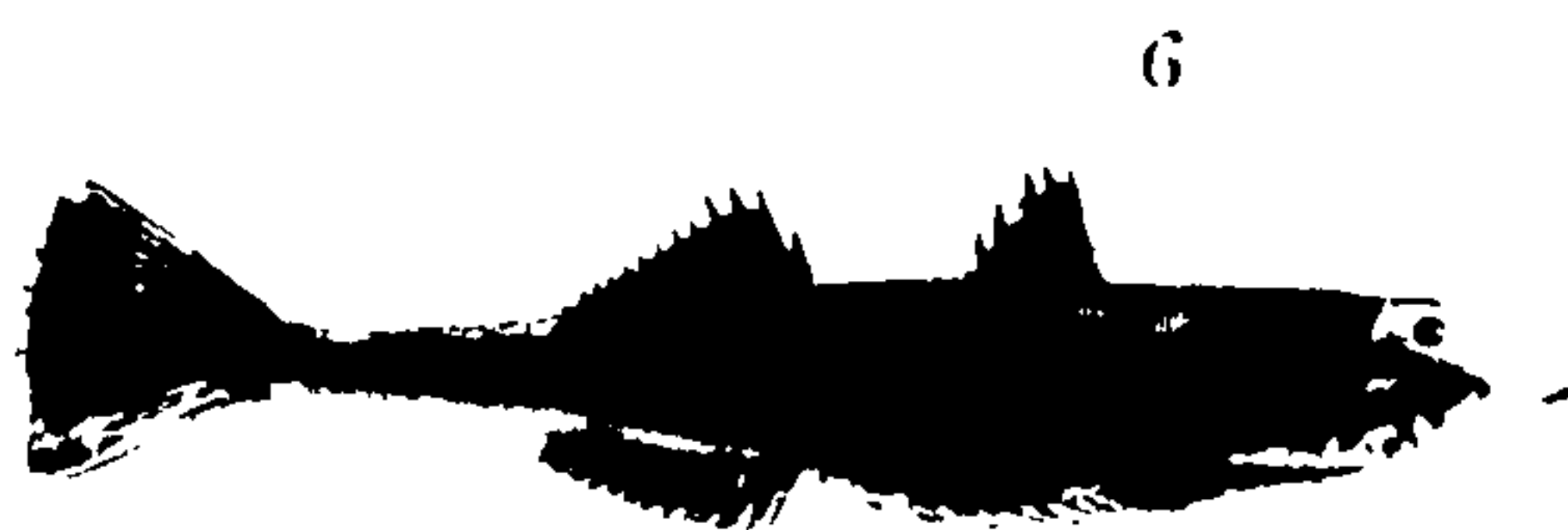
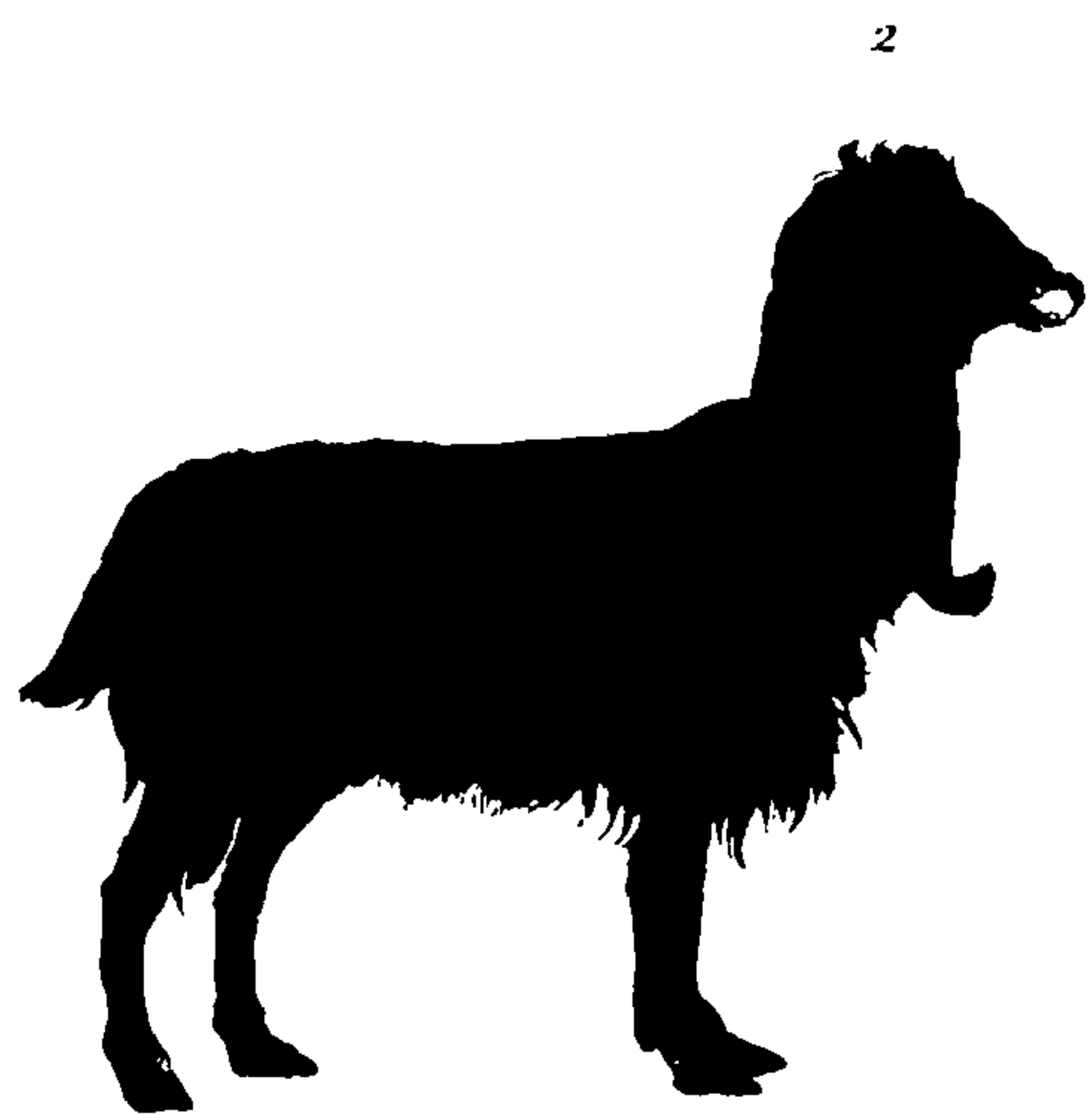
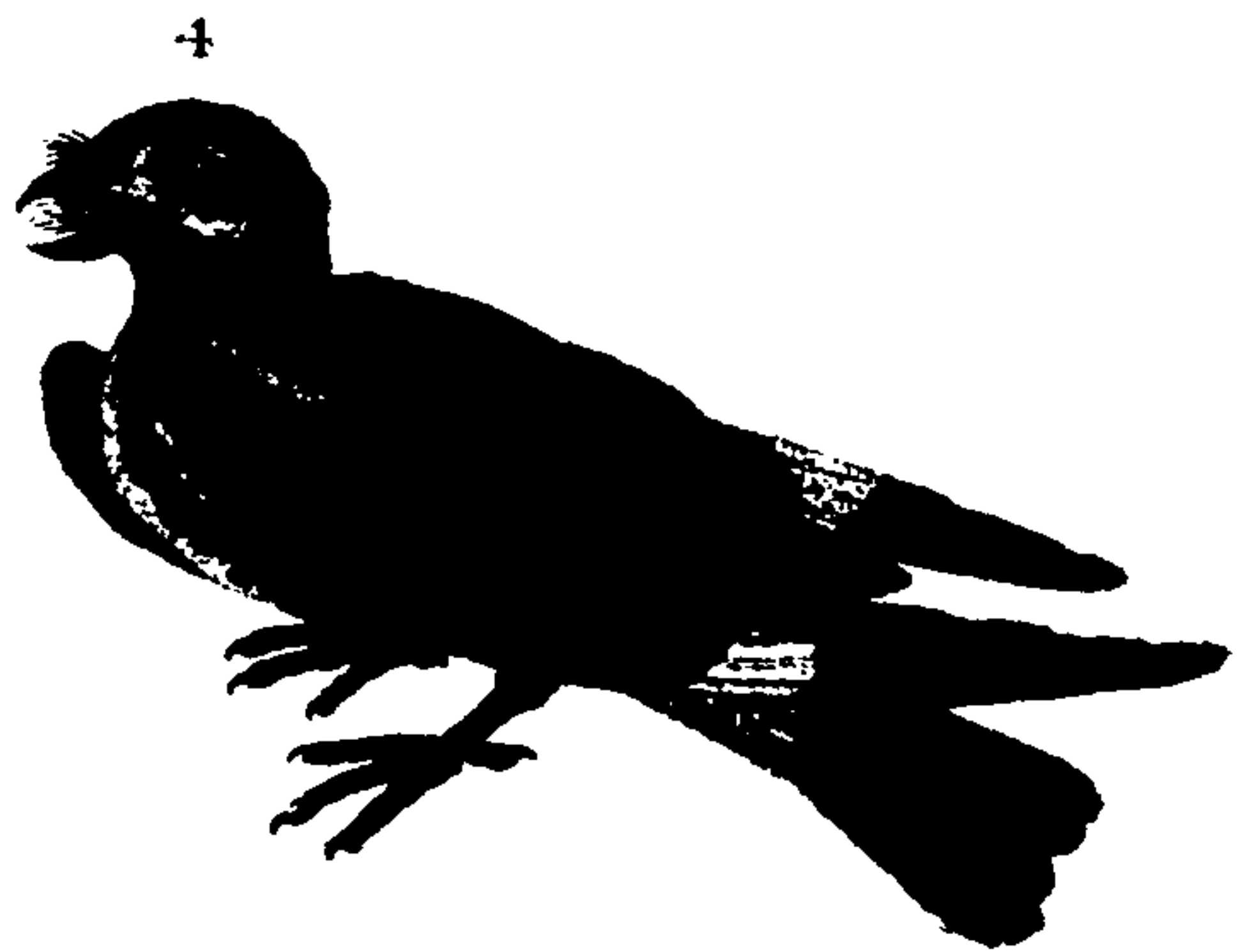
GOAT, IBEX; the Capra Ibex of Linnæus. This animal has large knotted horns reclining backwards, sometimes three feet in length. The eyes are large; the head is small; and the male has a dusky beard. The hair is rough, and of a deep brown colour mixed with some hoary; the legs are partly black, and partly white; the space under the tail, in some, is tawny, and in others white; the belly is a tawny white; the body is short, thick, and strong; the legs are thick; the tail is short; and the hoofs are very narrow. The female is less than the male; and her horns, which are smaller, have fewer knobs on the upper surface.

The Ibex inhabits the Carpathian and Pyrenean Mountains, the country of the Grisons, the Rætian Alps, and various countries of Asia. These creatures are excessively wild, and difficult to be shot; and, in very severe weather, they descend from the summits of those mountains where they usually reside, in quest of food. During the rutting-season, the males make a horrible noise; and the females separate, at the time of parturition, and retire to the side of some stream, in order to bring forth. Being very strong and intrepid, the chase of these animals is of course both difficult and dangerous: they sometimes precipitate the incautious hunters from the rocks; and, when pressed hard, they fling themselves down the highest precipices, and, pitching on their horns, frequently escape unhurt. Their flesh is esteemed wholesome; and their blood was once greatly reputed in pleuritic cases.

GOAT, CAUCASIAN. This animal is only a variety of the ibex. It has smooth black horns, sharply ridged on their upper parts, and hollowed on their exterior sides; they bend backwards considerably, are much hooked at their extremities, and approach a little at their points. The chin is furnished with a great dusky beard, mixed with chestnut colour; the fore-part of the head is black; the sides are mixed with brown; and the rest of the animal is grey, or grey mixed with rust-colour. Along the ridge of the back runs a black list; and the tail is also black.

These animals are superior in size to the largest He-Goats; but, with respect to form and agility, they resemble stags. They inhabit the lower mountains of Caucasus and Taurus, Asia Minor, and, most probably, the mountains of India. They abound on the barren hills of Laar and Khorazan, in Persia; and, according to Monardus, are also found in Africa. They are creatures of surprizing agility. The above naturalist was witness to the manner in which one of them saved itself by falling on it's horns: he saw it leap from a high tower, precipitate itself on it's horns, then spring on it's legs, and leap about, without sustaining the smallest seeming injury.

The Caucasian Goat is one of those animals which yields that once valued alexipharmic the bezoar-stone; a concretion formed of many coats, incrusting a nucleus of small pebbles, stones of fruits, bits of straw, or buds of trees. The incrusting coats are created from the vegetable food of



1. COMMON GOAT. 2. SYRIAN GOAT. 3. GOATSUCKER. 4. LESSER GOATSUCKER.
5. BLACK GOBY. 6. SPOTTED GOBY

GOA

of the animal, especially the rich, dry, and hot herbs, of the Persian and Indian mountains. The virtues of this substance are now exploded; and it is reckoned only an absorbent, and that of the weakest kind.

Since the discovery of this species of Goat, for which we are indebted to Professor Guildenstaedt, it has generally been supposed to be the origin of the tame or domestic breed, as there is the greatest conformity between its horns and those of the domestic kinds; unless it may be imagined that the latter have lost the knots, from their mode of life. The ibex was formerly regarded as the parent stock; and between it and the Caucasian a valuable breed may be produced.

GOAT OF ANGORA. The Natolian Goat, or, as Buffon calls it, the Goat of Angora, has longer ears than the domestic breed, and broader in proportion. The horns of the male are about the same length as those of the European Goat, but black, and very differently turned, proceeding horizontally on each side of the head, and being twisted round after the manner of a cork-screw: the horns of the female are shorter, and encircle the ears somewhat like those of the ram.

These animals are found only near Angora, Beibazar, and Cougua, in Asiatic Turkey. Those of the last-mentioned place have brown or black hair; and those of the two first places have hair of a silky fineness and silvery whiteness, in curled locks about eight or nine inches long. Their hair forms the basis of our fine camblets, and is imported into this country in the shape of thread; for the Turks, from a commendable attention to the poor of their own country, will not suffer it to be exported raw, as the spinning affords employment to multitudes.

The Goat of Angora is confined to a district of two or three days journey in extent; and, if removed to another climate, its hair becomes coarser, and consequently less valuable. The Goat-herds of Angora and Beibazar are extremely careful of their flocks, frequently combing and washing them; and this gives a beauty to their hair, which is unrivalled in any other part of the world.

GOAT, SYRIAN. This species is somewhat larger than the European. Its ears are pendulous like those of the hound, and from one to two feet in length; and so inconvenient are they sometimes to the animal, that its owner cuts them off, to enable it to feed with more ease. Its horns are black, bending a little forwards; and are only about two inches and a half in length. The colour of its hair is like that of the fox; and there are two excrescences under its throat resembling the gills of a cock.

These animals are chiefly kept round Aleppo, in order to supply the natives with milk; which, as in other countries, is esteemed wholesome and pleasant. They are driven through the streets from April to September, after the manner of sheasses in London; and their milk is sold to the inhabitants as they pass along.

GOAT, ARABIAN. This variety is very small. The male is covered with rough hair; beneath the chin hang two rough hairy wattles; and the horns, which are short, very thick, and triangular, lie so close to the skull, that they almost penetrate the skin. The horns of the female are less than those of the male; she is destitute of wattles; and her hair is smooth.

GOA

GOAT, WHIDAW, OR JUDA. This species resembles the common Goat, except in size, being no larger than the hare. It is found in Guinea, Angola, and all along the coasts of Africa: in those countries it becomes very fat; and its flesh is so much esteemed, that it is universally preferred to mutton. Linnæus says, that this animal was originally imported from America; but certainly this must be a mistake, as it has frequently been proved, that the Goat, as well as every other domestic creature, were entirely unknown on that continent before they were introduced by the Spaniards.

GOAT, BLUE. At the Cape of Good Hope, in Africa, there is found an animal called the Blue Goat, resembling the domestic Goat in shape; but considerably larger, being nearly of the size of the stag. Its hair is very short, and of a fine shining blue colour; but, when the animal is dead, it loses much of its beauty. Its horns are shorter in proportion than those of other Goats, and spirally turned; its beard is long and full; and its legs are long, but well-proportioned. Its flesh, though lean, is well tasted; but, in that plentiful country, this creature is chiefly killed on account of its skin.

This species is naturally shy and timid, seldom approaching the Dutch settlements; but is very numerous in the uncultivated and interior parts of the country. In those extensive regions which border on the Cape, there are also various other species of Goats, many of which are beautifully marked with brown, white, and red spots.

GOAT, CAPRICORN. The Capricorn is a variety having short horns, turning forwards at their extremities, their sides annulated, and the rings more prominent before than behind. These are the principal characters of this species; and such may be purely accidental, produced either by climate or food, which have a very considerable and sensible effect on animals unquestionably belonging to one and the same origin.

GOAT, SIBERIAN. This species varies both in size and colour. The skin of one of these animals, now in the British Museum, is covered with pale ferruginous hair, short on the sides, but longer on the top of the neck, and a little erect; on the shoulders, and along the lower sides of the neck, the hair is fourteen inches long, beneath which is a kind of short wool; and on the knees there is a bare spot, which seems to have been occasioned by kneeling in order to lie down. The tail of this animal is short; the horns are twenty-five inches long, eleven in girth in the thickest place, and nineteen distant from point to point; the mouth, the forehead, and the ears, resemble those of the ram; and the creature has no beard.

The island of Corsica furnishes a variety of this species, considerably smaller, and of a deepish brown mixed with a rust-colour; the belly, rump, and hind-legs, are white; and the horns of the female are much smaller than those of the male.

Belonius very injudiciously styles this animal the tragelaphus, or deer; though its horns do not fall off annually like those of the stag. Bullon supposes it to be the sheep in a wild state; but Pennant, and some other writers, are of a contrary opinion.

These Goats are found in the north-east parts of Asia; and in Barbary, Sardinia, Corsica, and Greece: they live on the mountains, and run with great rapidity among the rocks. Those of Kamtschatka, which are amazingly strong, grow to the size of young stags: they propagate in autumn; and the

GOA

female brings forth one, and sometimes two, at a birth.

GOAT, SHAMMOY, OR CHAMOIS. This animal is about the size of the domestic Goat, which it resembles in many respects. It is naturally very wild, but easily tamed; and is found only in rocky and mountainous places. It is extremely lively and active; its hair is like that of the doe; its colour is cinereous in spring, dun inclining to black in autumn, and a blackish brown in winter; its eyes are beautiful, round, and sparkling; it has two small horns, about half a foot long, which jet out forwards, bending a little backwards at their extremities; its ears are elegantly placed near its horns; and on each side of its face there are two stripes of black, the rest being of a whitish yellow colour. The flesh of this Goat is esteemed tolerable food; and each animal yields about ten or twelve pounds of excellent suet, which is convertible to many useful purposes.

Shammoy Goats are very common in Dauphiny, Piedmont, Savoy, Switzerland, Germany, Greece, and Crete. They assemble in flocks, from four to one hundred, dispersed on the crags of the mountains. The full-grown males feed at some distance from the rest, except during the rutting-time, when they approach the females, and drive away their young. They couple from the beginning of October to the latter end of November, and bring forth in March and April. The young ones follow their dams about five months, if not separated before by the hunters or the wolves. They live between twenty and thirty years; and the females generally produce two, and seldom more than three, at a time.

Though most animals are known to have some cry peculiar to themselves, the Shammoy has scarcely any; only a kind of feeble bleat, by which the parent calls its young; but, when danger threatens, and it wishes to alarm the rest of the flock, it makes a hissing noise, which is heard at a considerable distance. It is extremely vigilant, and has a quick and piercing eye. Its smell is also very distinguishing; for by it, we are told, it can discover any person at the distance of half a league, and give the earliest notice to its companions. On the least apprehension of danger, it utters its hissing note; and having reposed a moment after this alarm, it again looks round, and perceiving its fears to be real, continues to hiss, at intervals, till it has spread the alarm to a vast distance. During this time, it seems violently agitated, it strikes the ground with one of its fore feet, and sometimes with both; bounds from rock to rock; turns, and looks about; runs to the edge of the precipice; and, still perceiving the enemy, flies with the utmost speed. It is remarked by naturalists, that the hissing of the male is much longer and louder than that of the female.

The Shammoy, like the common Goat, feeds on the tenderest herbage, and selects the most delicate parts of plants, flowers, and buds. While it feeds on succulent herbs it drinks but little, and chews the cud at intervals. This creature is so very impatient of heat, that, during the ardors of summer, it is found only in the caverns of rocks, amidst fragments of unmelting ice, and under the shades of high spreading trees, or such hanging precipices as face the north, and keep off the rays of the sun. It goes to pasture in the mornings and evenings, but seldom quits its retreat during the heat of the day. During the months of winter, it

GOA

sleeps in the thickest forests, and subsists on the shrubs and buds of the pine-tree. It turns up the snow with its feet in quest of herbage; and, where it perceives any vegetables, exerts its utmost industry to uncover them. The more craggy and rugged the forest, the more the Shammoy seems to enjoy its situation. It always ascends or descends in an oblique direction; and will throw itself down a rock thirty feet high, and safely fix on some protuberance or fragment on the side of the precipice, though only large enough for its feet to rest on: in its descent, however, it strikes the rock three or four times with its feet, as well to stop the velocity of its motion, as to break the force of its fall.

The skin of this animal, when dressed, has been celebrated for its softness and warmth: at present, however, the leather called Shammoy is made from the skins of tame Goats, sheep, and deer.

The Shammoy is hunted, during the winter, partly for its skin, and partly for its flesh: and its chase is a very laborious employ; for it must be approached by surprise, and shot with a rifle-barrelled gun.

Altmann informs us, that there are two species of Shammoy Goats in Switzerland; one of which is redder and smaller than the other, and never descends into the vallies, but continues on the most inaccessible mountains during the whole winter. The other species, which is larger and browner, sometimes descends to the bottoms of the mountains; where it lives, during the winter, on the extremities of the branches of fir-trees.

Many medicinal qualities are ascribed to several parts of this animal. The fat, mixed with milk, is said to be beneficial for ulcerated lungs; and the gall is supposed to strengthen the sight, to cleanse ulcers of the cornea, and to remove spots. The stone sometimes found in the stomach of this creature, is called the German bezoar, and was formerly thought to possess the virtues of the Oriental bezoar; but even those qualities which the latter was once said to possess, are no longer attributed to it, being now considered only as a weak absorbent.

GOAT, SEA. This fish has a compressed head, in the upper part of which the eyes are placed; the mouth is small; and in each jaw there are eight teeth. Along the middle of the back are three very strong large prickles united by a membrane, the foremost being by far the largest: these appendages the creature can raise or depress in a bony sulcus formed by nature for that purpose; which peculiarity seems to belong to this fish only. It is covered with scales which bear some resemblance to those of a serpent; for, besides their being arranged in such a manner that the intermediate lines make a sort of chequer-work, they also stick so extremely close to the skin, that they cannot be separated without a laceration of the parts. The colour of the Sea-Goat is a dusky green, speckled with blue; the dorsal and ventral fins are blackish, marked with blue and red spots; the shape is broad, very flat, and almost roundish; and the weight is about two pounds.

This fish is sometimes caught in the Mediterranean, and its skin is preserved in the cabinets of the curious.

GOAT SUCKER. This bird, called also the Churn-owl, weighs about two ounces and a half; its length is ten inches and a half, and its breadth twenty-two. The irides are hazel-coloured, the bill is about one third of an inch long, the tongue

GOA

is very small, and placed low in the mouth; the legs are small, scaly, and feathered below the knees; the middle toe is connected to those on each side by a small membrane reaching to the first joint; and the claw of the middle toe is broad and thin. The colours are plain; but they have a beautiful effect from the elegance of their disposition, consisting of black, brown, grey, white, and ferruginous, arranged in streaks, spots, and bars. The male is distinguished from the female by an oval spot near the end of each of the three first quill-feathers, and another on the two exterior feathers of the tail.

This bird is with great propriety placed among the swallow tribe by Klein, who calls it the swallow with an undivided tail. It possesses the principal characters of this genus; namely, a very large mouth, a very small bill, and small legs. It is also a bird of passage; and agrees with the swallow kind in its food and the manner of seizing it; but differs from it as to the times of preying, the Goat-Sucker flying chiefly by night. It continues but a short time in this island; appearing about the latter end of May, and disappearing in the northern parts of Britain about the end of August; but, in the southern, it flies above a month later. It visits all parts of this kingdom, from Cornwall as far as the county of Ross. Scopoli, among the moderns, seems to credit the report of its sucking the tears of goats; an error handed down from the days of Aristotle.

The notes of the Goat-Sucker are extremely singular; the loudest of which so much resembles the sound of a large spinning-wheel, that the Welsh call this bird *aderyn y droell*, or the wheel-bird. It begins its song about the close of day, sitting usually on a bare bough, with its head lower than its tail, its lower jaw quivering with the efforts; and the noise is so violent, as to give a sensible vibration to any little building on which it may happen to alight, and emit this species of note. The other, and indeed the common tone, is a sharp squeak, which it frequently repeats; and this seems to be the call of love, as the male is observed to reiterate it when in pursuit of the female among trees.

The Goat-Sucker deposits its eggs on the bare ground, usually two in number, of an oblong form, and a whitish hue beautifully marbled with reddish brown.

GOAT-SUCKER, LESSER. In its general shape and colour, this species exactly resembles the preceding; but it is one-third part less. In Virginia, it is called Whip-Poor-Will, from its cry, which seems to express those words very nearly. The bill is small and black, the mouth is wide, its angles extending beyond the eyes; the sides of the head round the eyes are a light brown inclining to ash-colour; and on the throat are feminear white spots, the corners of which revert towards the ears. The top of the head, the upper side of the neck, the back, the upper coverts of the wings, and the tail, are covered with dark brown feathers, transversely barred, and sprinkled with a lighter brown and some little mixture of ash colour blended in an irregular manner. From the bill some bright spots of orange-colour pass over the eyes, down the sides of the neck; and on the upper coverts of the wings are some pretty distinct spots of light brown. The quill-feathers are dusky, or rather black; the five last having a white spot passing through them, which mark appears both internally and exter-

GOB

nally. The covert-feathers within-side the wings are white, with a cloud of orange transversely barred with dusky lines; the whole under-side, and covert-feathers under the tail, are white, with some mixture of faint orange regularly crossed with lines of dusky black; the legs and feet are very small, and feathered a little below the knees; the exterior and middle toes are joined part of the way by a membrane; and the two middle claws are serrated within-side.

This bird, first described by Edwards, was brought from Virginia. To illustrate its history, we shall subjoin a quotation from a letter, which accompanied the bird first imported. 'These birds come to Virginia about the middle of April; from which time till the end of June they are heard every night, beginning about dusk, and continuing till day-break; but it is chiefly in the upper or western parts of the province that they are so frequent: I never heard more than one in the maritime parts; but near the mountains, in the month of May, within a few minutes after sun-set, they begin, and make a very loud and shrill noise all night, which the echoes from the hills increase to such a degree, that the first time I lodged there I could hardly sleep; however, they are seldom seen in the day-time. The Indians imagine these birds are the souls of their ancestors formerly slaughtered by the Europeans; and say that they never appeared in this country before that slaughter. Many people regard them as birds of ill omen. I have been informed, that they lay two eggs of a dark green colour, spotted and scrolled with black, in the plain beaten paths, without any signs of a nest; on which they sit very close, and suffer a near approach before they meditate a flight.'

GOBEMOUCH; the Fly-catcher Lizard. A species of American lizard which subsists on catching flies. It is one of the smallest of the lizard kind; and is very beautiful, its skin appearing as if covered with leaf-gold or silver; and, in some varieties, green, red, and gold, are elegantly intermixed.

These creatures enter the houses of the inhabitants of that country without any seeming apprehension, and only destroy the flies and other vermin they find there. Indeed, their whole attention is occupied in the pursuit of these insects; and it is really amusing to observe the various manœuvres they adopt in this favourite chace. The natives suffer these animals to run about unmolested; and if they perceive any flies, they will pursue them over the tables, cloaths, and even hands, of the inhabitants, without doing the least injury. Notwithstanding the beauty of these reptiles when alive, they are no sooner dead, than they totally vanish, and they become only of a dusky grey hue.

GOBIO CAPITATUS. An appellation given by many writers to the cottus, or cottus levis, of Linnæus, with two spines on its head. This is a small fish; and, in England, it is called the bull-head, or miller's-thumb.

GOBIONARIA. A name given by Gaza, and some others, to the little fish called cobitis, and *aphia cobitis*, by the ancient Greeks.

GOBIUS. A genus of fishes of the acanthopterygious or prickly-finned kind; the characters of which are these: the branchiostegic membrane contains on each side very distinct bones, extremely irregular in their size, the first and fourth being much broader than the others; the ventral fins unite,

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unite, and form one single fin, shaped like a funnel; there are two dorsal fins, the anterior of which consists of somewhat rigid bones; the scales are rough; the body is oblong; the head is compressed; and the eyes are covered with the common skin of the head. In the Artedean system, there are four species belonging to this genus.

According to Linnæus, the *Gobius* is a genus of the thoracic order, having the eyes placed near each other, and two small holes between them, four branchiostegious rays, and the ventral fins united. This last-mentioned naturalist enumerates eight species; the *Gobius niger*, *paganellus*, *eleotris*, *aphya*, *joso*, *pectinirostris*, *barbarus*, and *anguillaris*.

G O B I U S A S P E R. An appellation given by Gesner to a species of perch, called by other naturalists *asper pisciculus*; and, by Linnæus, *perca asper*. It is distinguished among the perch tribe by Artedi under the name of the perch with eight or nine black lines on each side.

G O B I U S F L U V I A T I L I S. See GUDGEON.

G O B Y, B L A C K. This fish grows to the length of six inches. The body is soft, slippery, and of a slender form; the head is large in proportion to the size of the animal; the cheeks are inflated; the teeth are small, and disposed in two rows; and from the head to the first dorsal fin there is a small sulcus. The first dorsal fin consists of six rays; the second, of fourteen; and the pectoral fins of sixteen or seventeen, closely united. The ventral fins coalesce, and form a sort of funnel, by means of which this fish affixes itself to the rocks; the tail is moderately long and rounded; the colour is brown, or deep olive, mixed with dark streaks, and spotted with black; and the dorsal and anal fins are a pale blue, the rays being marked with minute black spots.

G O B Y, S P O T T E D. This species is caught in several parts of the British seas, the longest being only about three inches. The nose is obtuse; the eyes are large and prominent; the irides are sapphirine; the head is flat; the tongue is large; and both jaws are furnished with teeth. The first dorsal fin consists of six rays, and the second of eleven; the ventral fins are united; the anal fin consists of eleven rays; and the tail is even at the end. The body is of a whitish colour, obscurely spotted with ferruginous; and the rays of the dorsal fins and the tail are barred with the same colour.

G O D W I T; the *Scolopax Oligocephala* of Linnæus. This bird resembles the woodcock in many respects. It is sixteen inches in length, and twenty-seven in breadth; and its weight is upwards of twelve ounces. The bill is four inches long, black at the end, and of a pale purple colour at the base, and from the bill to the eye there is a broad white stroke. The plumage of the head, neck, and back, is of a light reddish brown hue, marked in the middle with a dusky spot; the belly and the vent feathers are white; and the tail is regularly barred with black and white. The six first quill-feathers are black; the legs, in some, are dusky; in others, a greyish blue; and the exterior toe is connected by a strong serrated membrane to the middle toe, as far as the first joint. The male is distinguished from the female by some black lines on the breast and throat, of which the latter is destitute.

These birds are taken in the fens, in the same season and manner with the rails and rees; and, when fattened, are esteemed a peculiar delicacy.

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They appear on the British coasts in September, in small flocks; remain in the island during the winter; and, like curlews, walk on the open sands, and feed on insects.

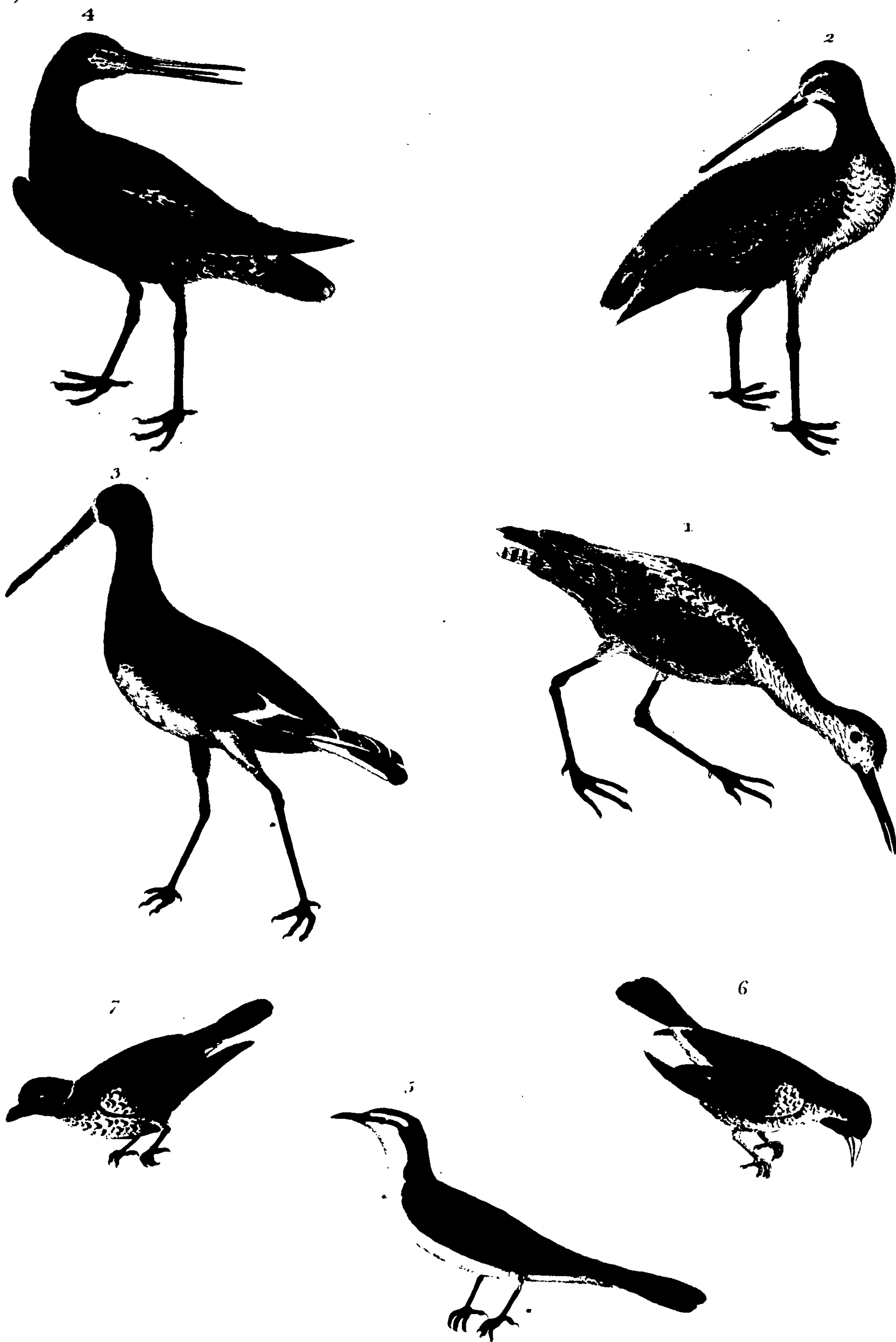
G O D W I T, C I N E R E O U S. This species was first discovered near Spalding, in Lincolnshire. The bill is two inches and a half long; the head, neck, and back, are variegated with ash-colour and white; the tail is slightly barred with cinereous; the throat and breast are white, except that the latter is marked with a few ash-coloured spots; and the legs are long, slender, and ash-coloured. This bird is much of a size with the green-shank, and approaches it nearly in colour; but the thickness of its bill forms a specific distinction.

G O D W I T, R E D. This bird is seldom seen in England, but it sometimes frequents the northern provinces. It is superior in size to the common kind: the bill is nearly four inches long, a little reflected upwards; the lower half being black, and the upper yellow. The head, neck, breast, sides, scapulars, and upper part of the back, are of a bright ferruginous colour; the head is marked with oblong dusky lines; the neck is plain; the breast, sides, scapulars, and back, are varied with transverse black bars, and the edges of the feathers with a pale cinereous brown. The middle of the belly is white; the lesser coverts of the wings are brown, the greater being tipped with white; the shafts, and the lower interior webs of the greater quill-feathers, are white; the exterior webs, and the upper half of the secondary feathers, are black, the lower half being white; the coverts, and the inferior part of the tail-feathers, are white, the upper part being black; the legs, which are also black, are four inches long; and the thighs above the knees are naked for the space of one inch and three-quarters.

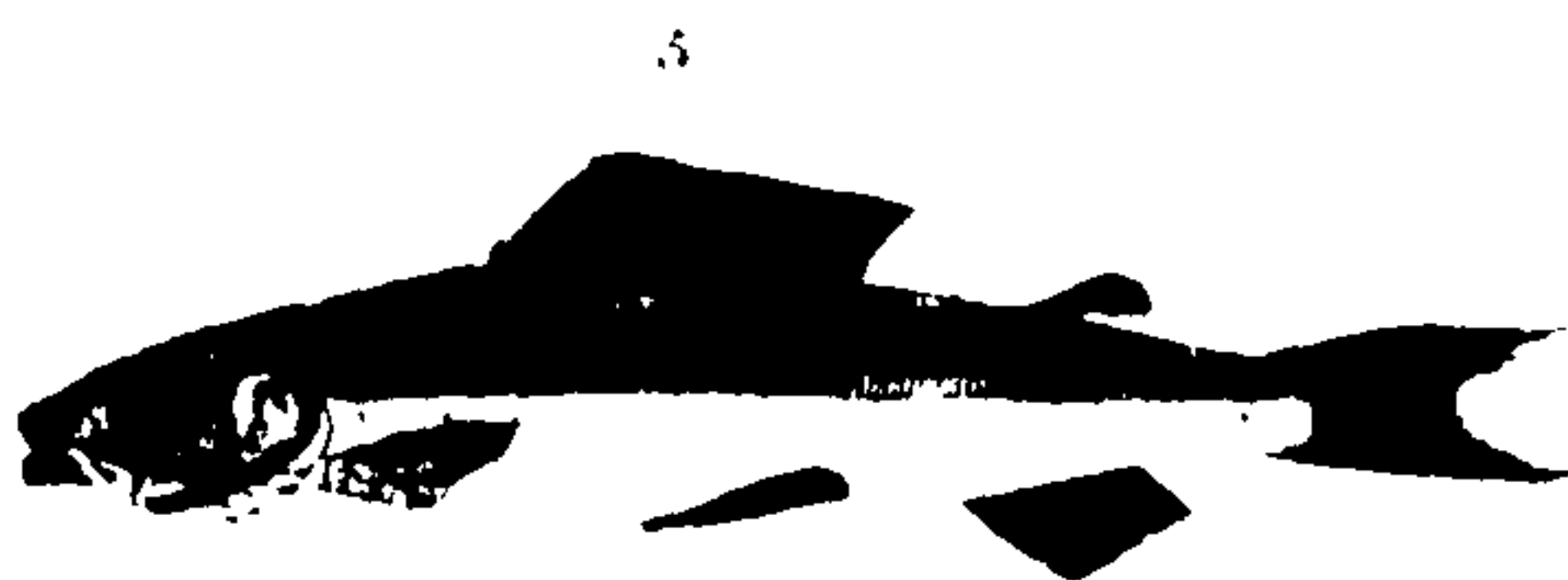
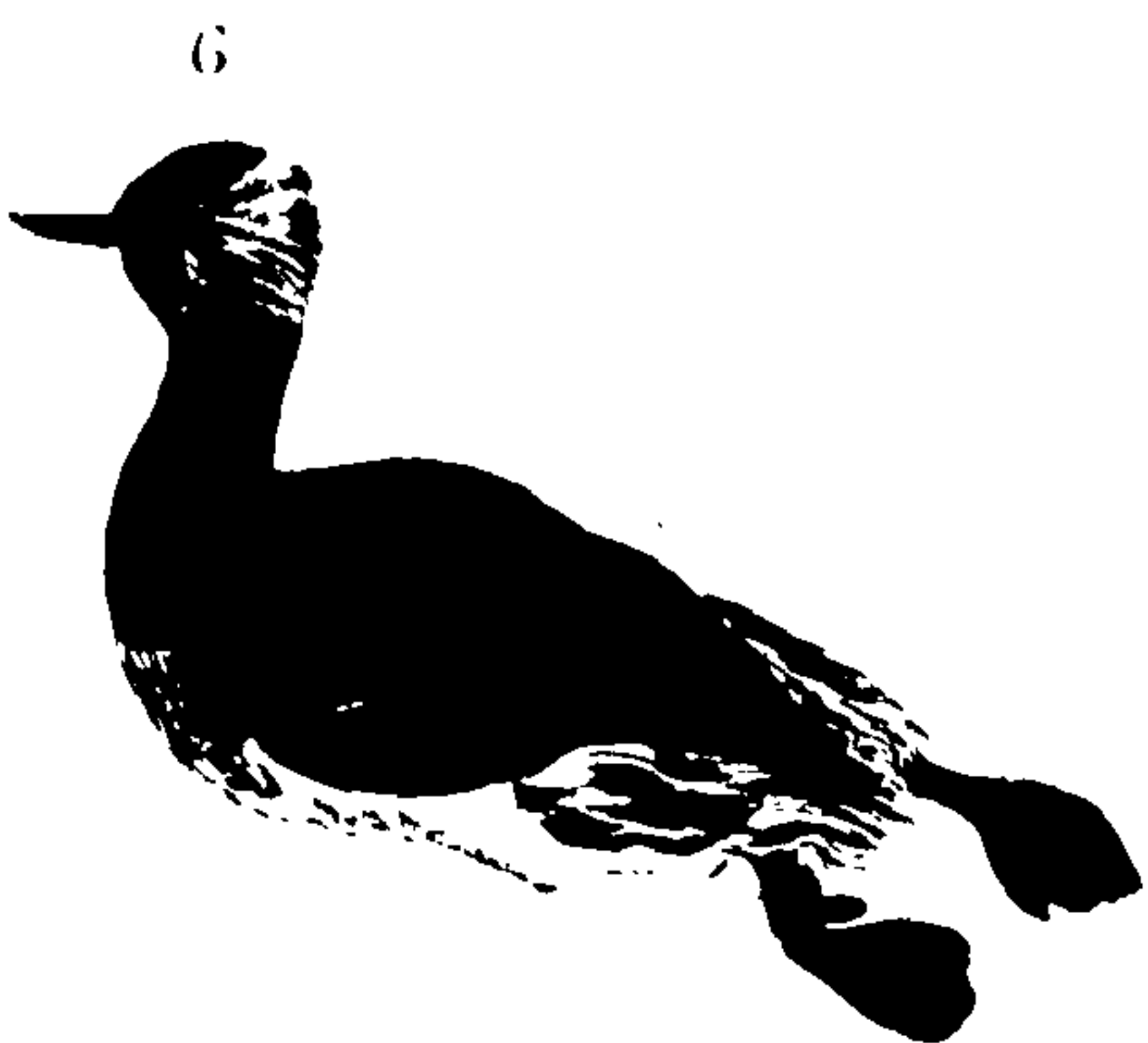
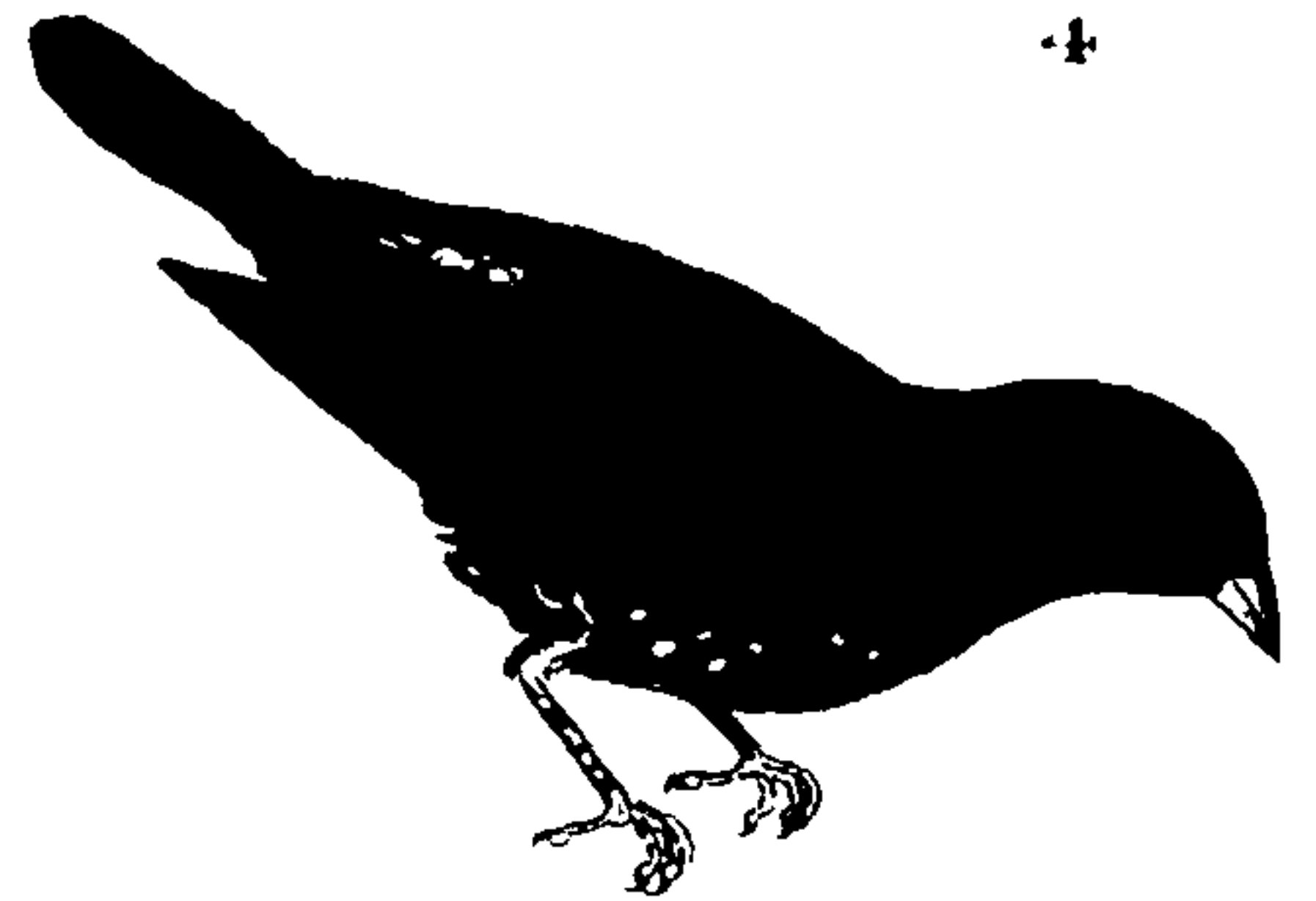
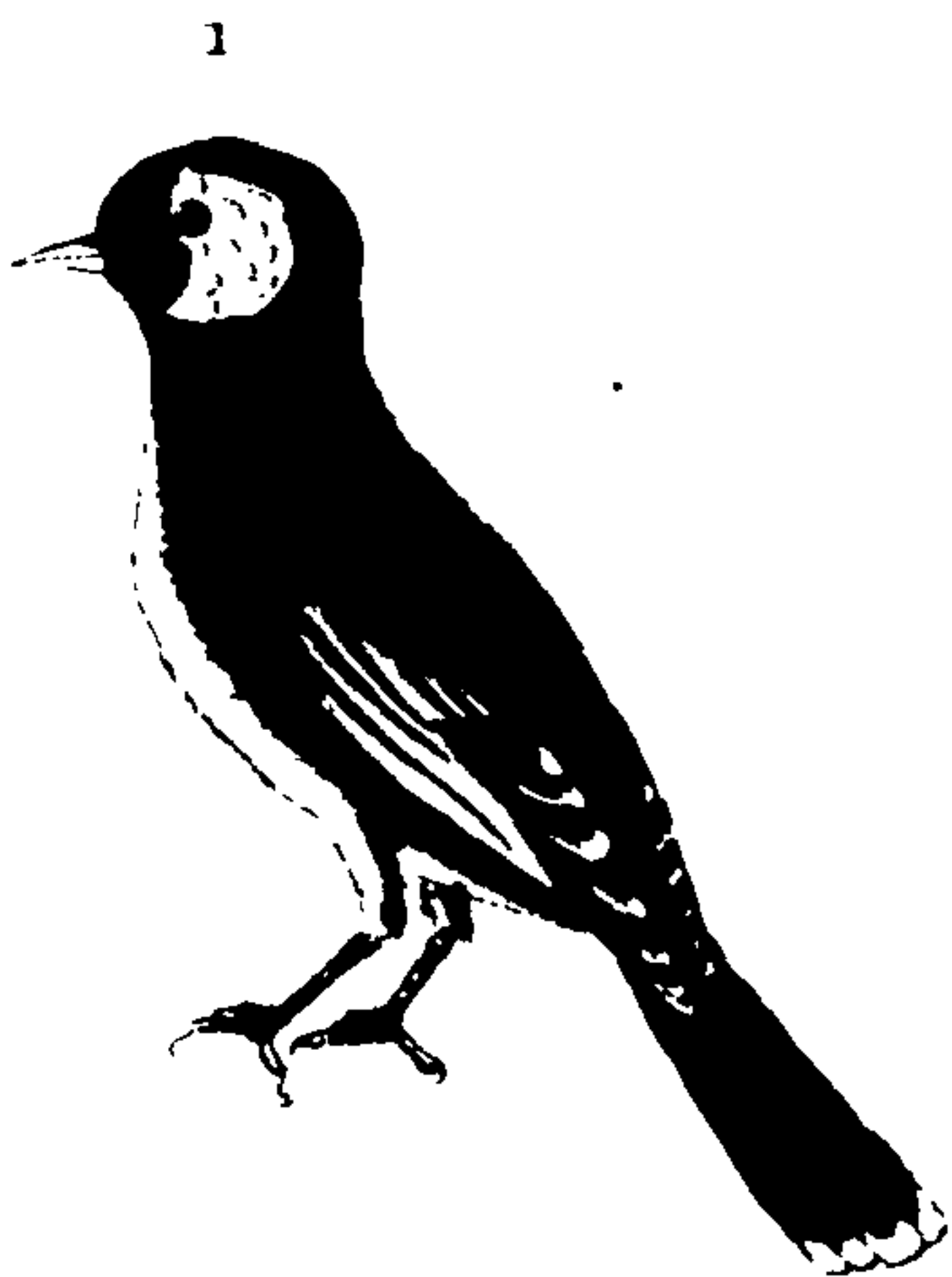
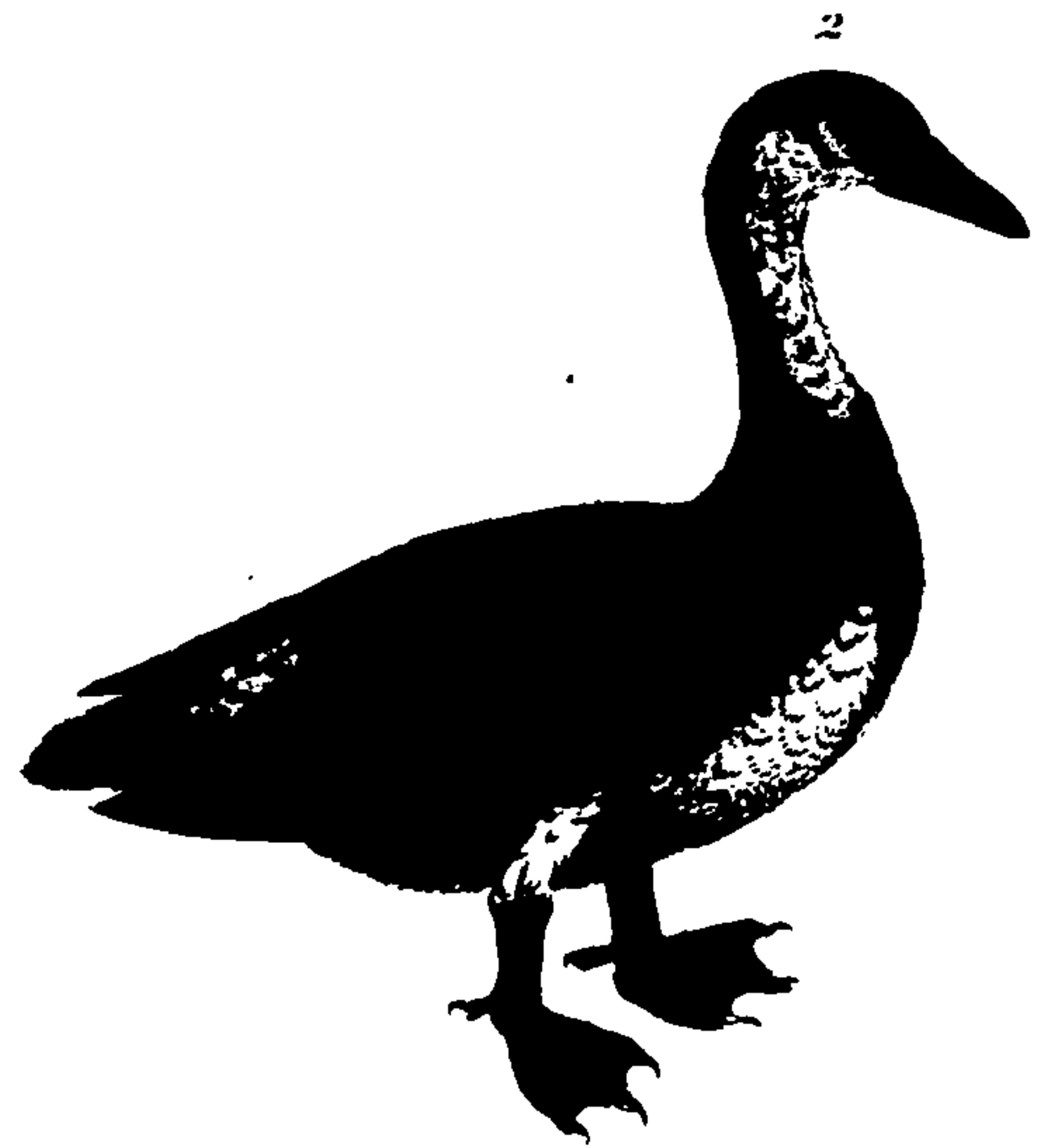
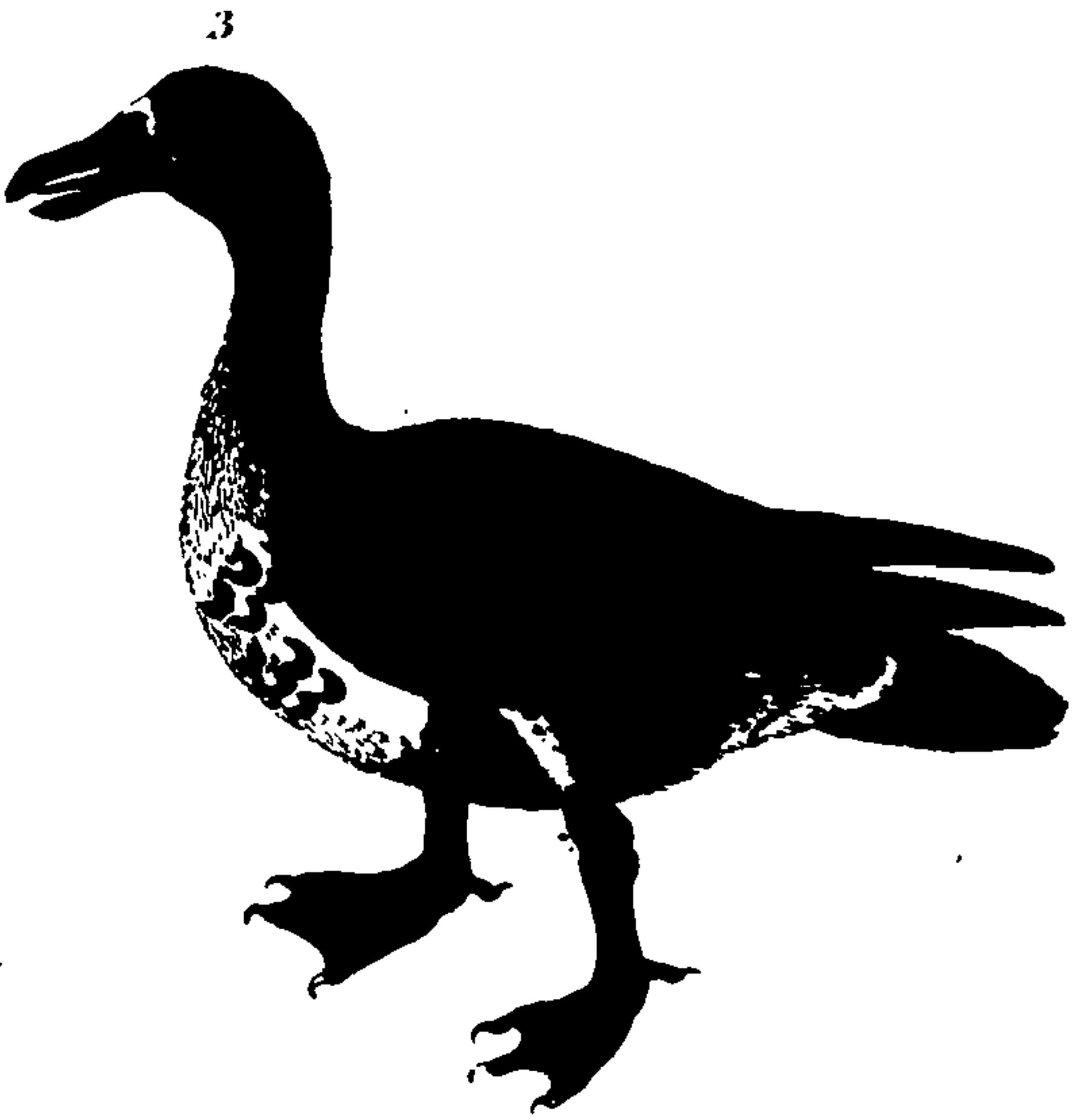
G O D W I T, L E S S E R. This species weighs about nine ounces; its length is seventeen inches, and its breadth twenty-eight. The bill bends a little upwards, and is more than three inches long; the chin is white, tinged with red; the neck is cinereous; the head is of a deep ash-colour; the back is uniformly brown; and the rump is encompassed with a white ring. The two middle feathers of the tail are black; the outermost, especially on the exterior web, are white almost to their tips; and, in the rest, the white part becomes less and less towards the centre. This bird was first described by Ray.

G O D W I T, A M E R I C A N, G R E A T. The bill of this species is about four inches long, straight and slender, and of a bright yellow colour near the base, growing gradually dusky towards the point; the nostrils are placed pretty near the head, but the eyes are more remote from the head than is usual in other birds; the head, and the upper part of the body, are marked with black and dark brown spots, except that the rump is brighter; the quills of the wings next the great ones are of an orange colour marked with small black spots; the belly and thighs are a brownish white; the thighs are naked far above the knees; and the feet and legs are covered with dusky scales. This bird is a native of Hudson's Bay.

G O D W I T, R E D - B R E A S T E D. The bill of this species, which measures upwards of three inches, is long and straight, black at the point, and yellowish towards the base; on each side of the eye passes a whitish line, which rises from the bill; the top of the head, the neck, and the back, are covered



1 CINNAMOUS GODWIT 2 GREAT AMERICAN GODWIT 3 RED GODWIT 4 RED-BREASTED GODWIT 5. GULLIVER. 6 GREEN GOLDFINCH 7. RED-HEADED GREENFINCH



1. GOLDFINCH 2. BLUE-WINGED GOOSE 3. WHITE-FRONTED GOOSE 4. GOWRY-BIRD
5. GRAYLING 6. EARED GREBE 7. INDIAN GREEN FISH.

vered with dark brown feathers, variegated with black dusky lines; the rump is white; the tail is of a blackish brown colour; the primaries are a dark cinereous with white shafts; the quills towards the back are a reddish brown and black, interchangeably pectinated into each other on their webs; the covert-feathers immediately above the quills are brown with white tips; the lesser coverts are a light brown, and the interior are a dark ash, or blackish. The lower part of the neck, the breast, and the belly, are of a reddish orange-colour, with small transverse lines of black; the legs are bare of feathers above the knees; and the exterior and middle toes are partially connected by a membrane. This bird has a general resemblance to the red Godwit, which occasionally visits the British coasts. It is a native of the northern parts of America.

GODWIT, WHITE. This elegant species is wholly white, except the tail, the primaries, and the small feathers on the ridge of each wing, which have a dirty tinge. The bill turns up towards the point; and in this respect gives the bird the appearance of the avosetta kind.

GOGGET. An appellation frequently given to the *gobius niger* of Linnaeus, the sea-gudgeon, or rock-fish. See **GOBY, BLACK.**

GOIAVIER. A bird of the fly-catcher kind, so called by the natives of Manilla. The top of the head is black; from the superior angle of the bill rises a white transverse line, which passes above the eye, and extends to the hind-part of the head; and below this white line there is another of a black colour, which passes through the eye to the base of the lower mandible. The upper part of the body, and the tail, are of a brownish earth-colour; the primaries of the wings and the tail are somewhat darker, and sprinkled with black; the throat, the breast, the belly, and the sides, are a dirty white; the under-side of the tail is a bright yellow, of which colour also are the irides; and the feet and bill are black.

This bird, which was first described by Sonnerat, frequents the vicinities of houses, seems remarkably familiar, and lives on fruits and insects.

GOLD EYE, OR GOLDEN EYE. An appellation given by naturalists to a species of duck. See **DUCK.**

GOLD-FINCH; the *Fringilla Carduelis* of Linnaeus. The Gold-Finch, which is the most beautiful of our hard-billed birds, weighs about half an ounce; its length, from the tip of the bill to the end of the tail, is five inches and a half; and the greatest expansion of its wings is nine inches. The bill is white tipped with black, the base being surrounded with a ring of rich scarlet feathers; a black line extends from the angles of the mouth to the eyes, the cheeks are white; from the top of the head a broad black line passes on each side almost to the neck, the hind-part of the head is white; the back, rump, and breast, are of a fine pale tawny brown colour; the belly is white; the wings and tail are black, but the points of the primaries in both are white; a beautiful yellow stripe runs a ro's the wings; the tail is about two inches long; and the legs are white.

The male is distinguished from the female by the feathers on the sides of the wing, which are of a deep black colour, whereas those of the hen are a dusky brown, and the black and yellow in the wings of the latter are less brilliant than in those of the male. The young bird, before it molts,

has a grey head, and is hence called the Grey-pate by bird-catchers.

The Gold-Finch begins to construct its nest in April, when the generality of fruit-trees are in blossom. As it excels other small birds in the beauty of its feathers, so likewise in ingenuity. Its nest is small, but extremely beautiful: the outside consists of very fine moss curiously interwoven with other materials; and the inside is lined with fine down, having the appearance of cotton. This bird lays five or six white eggs, marked with deep purple spots on their upper ends. It is naturally fond of orchards; and frequently builds its nest in the apple or pear-tree.

Gold-Finches being mild and gentle to a very high degree, are more easily tamed than almost any other birds. They are soon reconciled to their imprisonment in cages; where, after they have remained a considerable time, they become so much attached to them, that if their doors be opened, they will not fly away. In some parts of England they are called Draw-waters, from the facility with which they learn to draw their water when inclined to drink; for which purpose they are sometimes furnished with little ivory buckets fastened to small chains. It is very amusing to observe with what dexterity these little creatures pull up their little vessels, drink, and return them. They are much delighted with viewing themselves in looking-glasses, which are sometimes fixed by their owners to the backs of their bucket-boards; and they will frequently sit on their perches, pluming and dressing themselves with the greatest care imaginable, looking incessantly in their glasses, to see that every feather is placed in the most exact order.

The Gold-Finch is a long-lived bird, frequently reaching the age of twenty years; and Willughby mentions one which lived twenty-three. The young are tender, and therefore should not be removed from their nests till they are pretty well feathered. If a young Gold-Finch is brought up under a Canary-bird, a wood-lark, or any other singing-bird, it will readily catch their song. A cock Gold-Finch, bred from the nest, will couple with a hen Canary-bird, and their eggs will produce birds between both kinds, particularly of the song and colours of both; but this progeny will be barren. Towards winter, these birds assemble in flocks, and feed on seeds of different kinds, especially those of the thistle.

GOLD-FINCH, GREEN. This bird was in the aviary of the late Prince of Wales, but from what country it came is uncertain. It is about five inches long; the bill is of a light yellow colour, thick at the base, sharp at the point, and slightly incurvated downwards. The fore-part of the head round the bill, as far as the eyes, is a fine scarlet; the top of the head, and the hinder part of the neck, are ash-coloured; and the back, rump, and wings, are a yellowish green. The tail, when spread, is partly of a dusky hue; but, when closed, it appears red, the feathers having claret-coloured edges. The upper part of the breast is of a light yellow green hue, which gradually becomes white on the breast and belly, variegated with transverse dusky lines; and the legs and feet are flesh-coloured.

GOLD-FINCH, AMERICAN. The bill of this bird nearly resembles that of the common Gold-Finch both in shape and colour: the eyes are of a dark hazel-colour; the forehead is covered with

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black feathers; the rest of the head, the neck, breast, and back, are invested with bright yellow feathers; the thighs, the lower belly, and covert-feathers both above and beneath the tail, are a yellowish white; the lesser covert-feathers of the wings are yellow without, and whitish within; the rest of the wing-feathers are black; the tail is composed of twelve feathers of a blackish hue; and the legs and feet are reddish. The hen differs principally from the cock in having less beautiful and vivid shades of the same colours.

This bird was brought from New York. Edwards kept one of them for several years; and observed that it molted twice annually; namely, in the months of March and September.

GOLD FISH; the *Cyprinus Auratus* of Linnaeus. Gold Fishes, though natives of China, are quite naturalized in this kingdom, and breed as freely in open waters as the carp. They were first introduced into England about the year 1691; but were not generally known till 1728, when great numbers were imported, and circulated round the vicinity of London; from whence they have been distributed to the remotest parts of the country.

The Gold Fish, with respect to the figure of it's body, bears a strong resemblance to the carp. It sometimes grows to the length of eight inches in this kingdom; but in it's native country it arrives at the size of the herring. The nostrils are tubular, and form a kind of appendages. The dorsal fin and the tail vary greatly in shape; the latter is naturally bifid; but in many it is observed to be trifid, and in some quadrifid. The anal fins form the most distinguishing characters of this species, being placed opposite each other, like the ventral fins; whereas, in other fishes, they are arranged behind each other.

The colours of Gold Fishes are liable to the greatest variations: some are marked with a fine blue, brown, or bright silver; but the general predominant colour is that of gold of a most brilliant appearance. However, it is by no means necessary to be very particular in the description of animals which are so easily examined; and indeed prints only can convey an adequate idea of these beautiful, but varying fishes, to those who have not an opportunity of surveying them in an animated state.

The most admired kinds of Gold Fishes are caught in a small lake in the province of Che-Kyang. In that country, every person of fashion keeps them for his amusement, either in porcelain vessels, or in such small basons as decorate the courts of the houses in China. The extreme beauty of their colours, and their lively motions, afford great entertainment; especially to the ladies, whose pleasures, by reason of the narrow policy of that country, are very solitary and confined.

GOLD FISH is also an appellation given by some authors to the *alauša*, or shad, from the yellow colouring which frequently adorns it's gills.

GOLD SINNY. This fish, which is caught on the Cornish coasts, in the whole form of it's body, lips, teeth, and fins, bears a striking resemblance to the wrasse. It never exceeds a palm in length. Near the tail there is a remarkable black spot; and the first rays of the dorsal fin are tinged with black. The dorsal fin consists of sixteen spiny and nine soft rays, the pectoral of fourteen, the anal of three spiny and eleven soft, and the

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ventral of six; and the tail is almost even at it's extremity.

GOLDEN EYE. A species of fly, called also *Chrysops* and the Stinking Fly. It is a very beautiful insect, about three-quarters of an inch long; the body is slender, and of a greenish yellow colour; the wings are large and transparent; and the eyes, which are large, exhibit the appearance of gold. This animal is produced from a worm that feeds on the plant lice; and, when crushed, it emits an intolerable stench, from which circumstance it receives one of it's common names.

GOMATUS. An appellation given by many of the ancient writers to the gurnard, more frequently called *gurnardus*.

GONAMBÜSCH. A name whereby some authors express the humming-bird, the smallest of all the feathered tribe.

GONDOLA SHELL. An appellation sometimes given to a peculiar species of shell of the *concha globosa* kind. It is of the genus of *dolium*, and comprehends seven species.

GONGRUS. A name given by Ælian, Apian, and some others of the Greek writers, to the conger, or sea-eel.

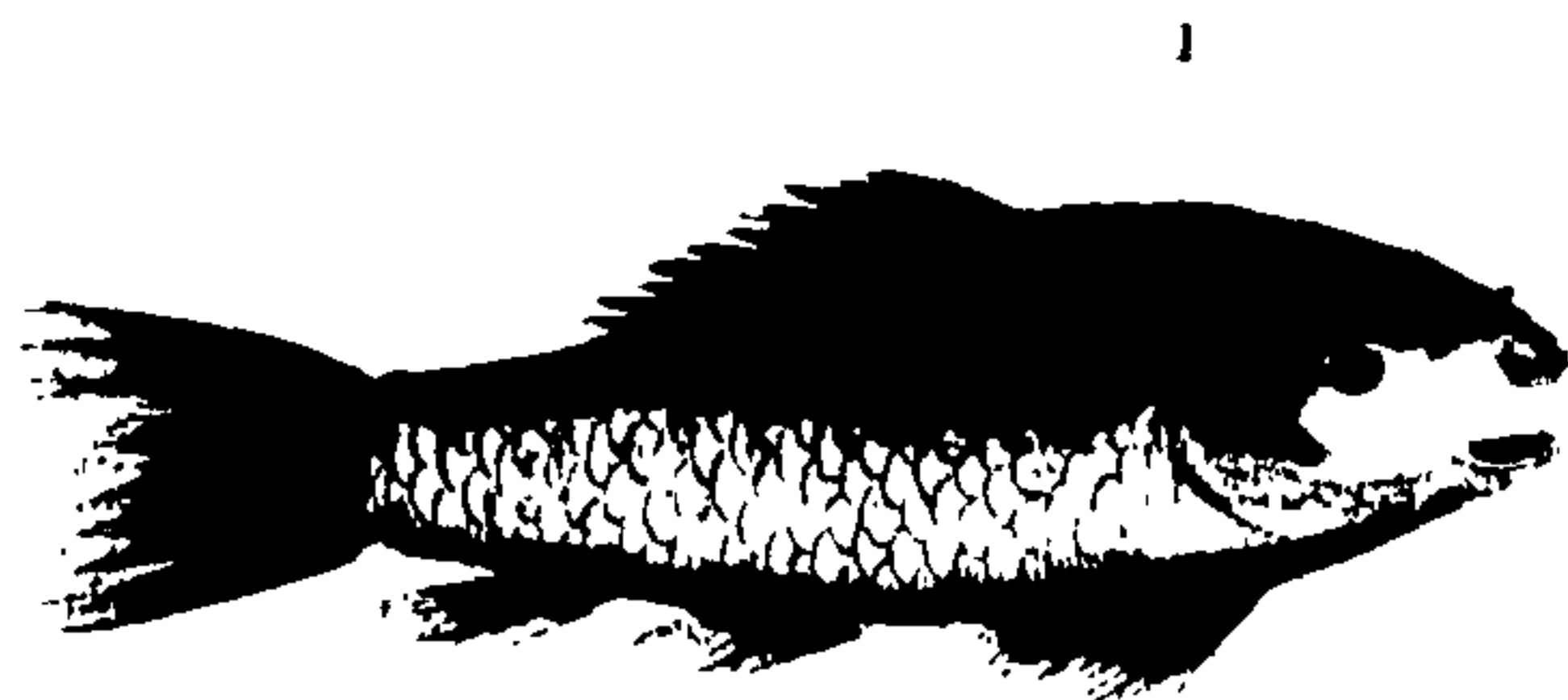
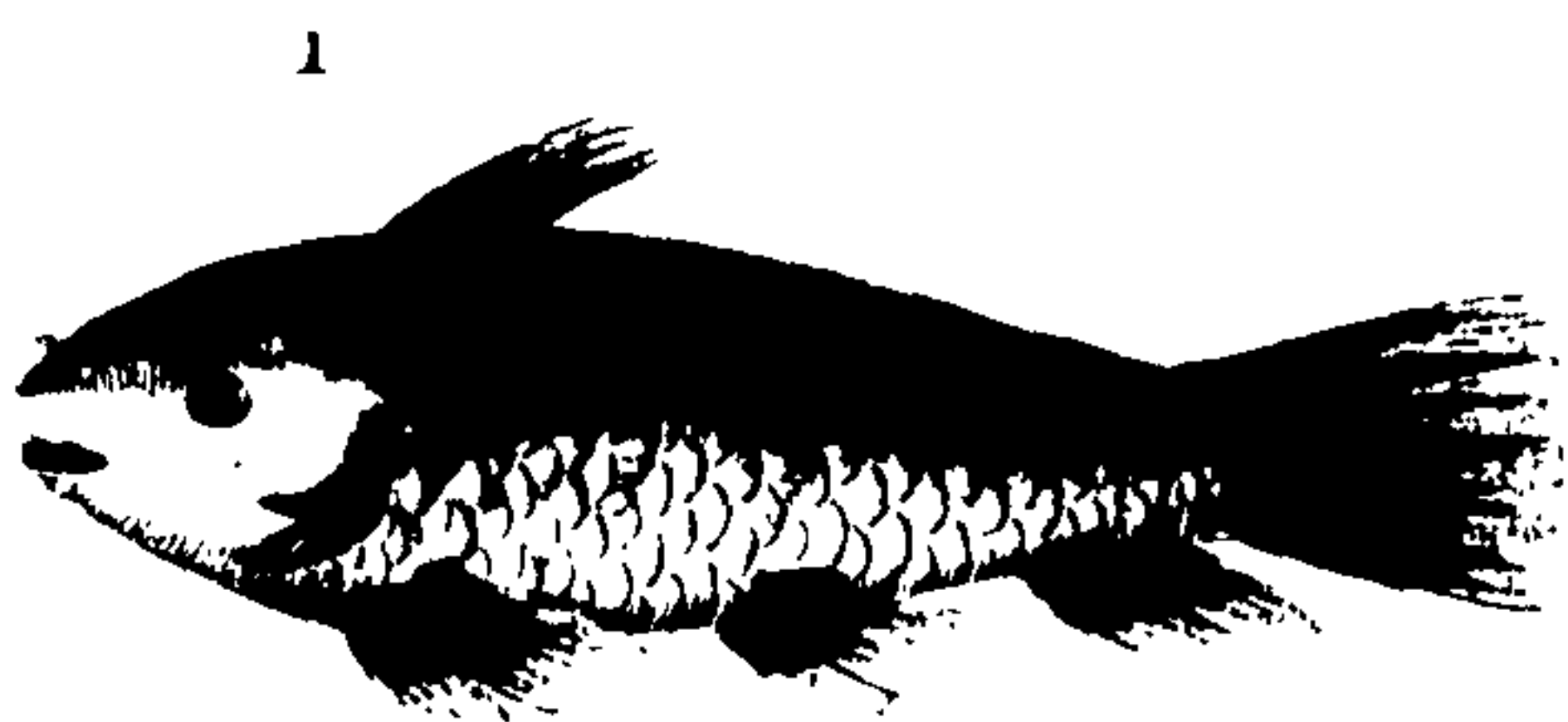
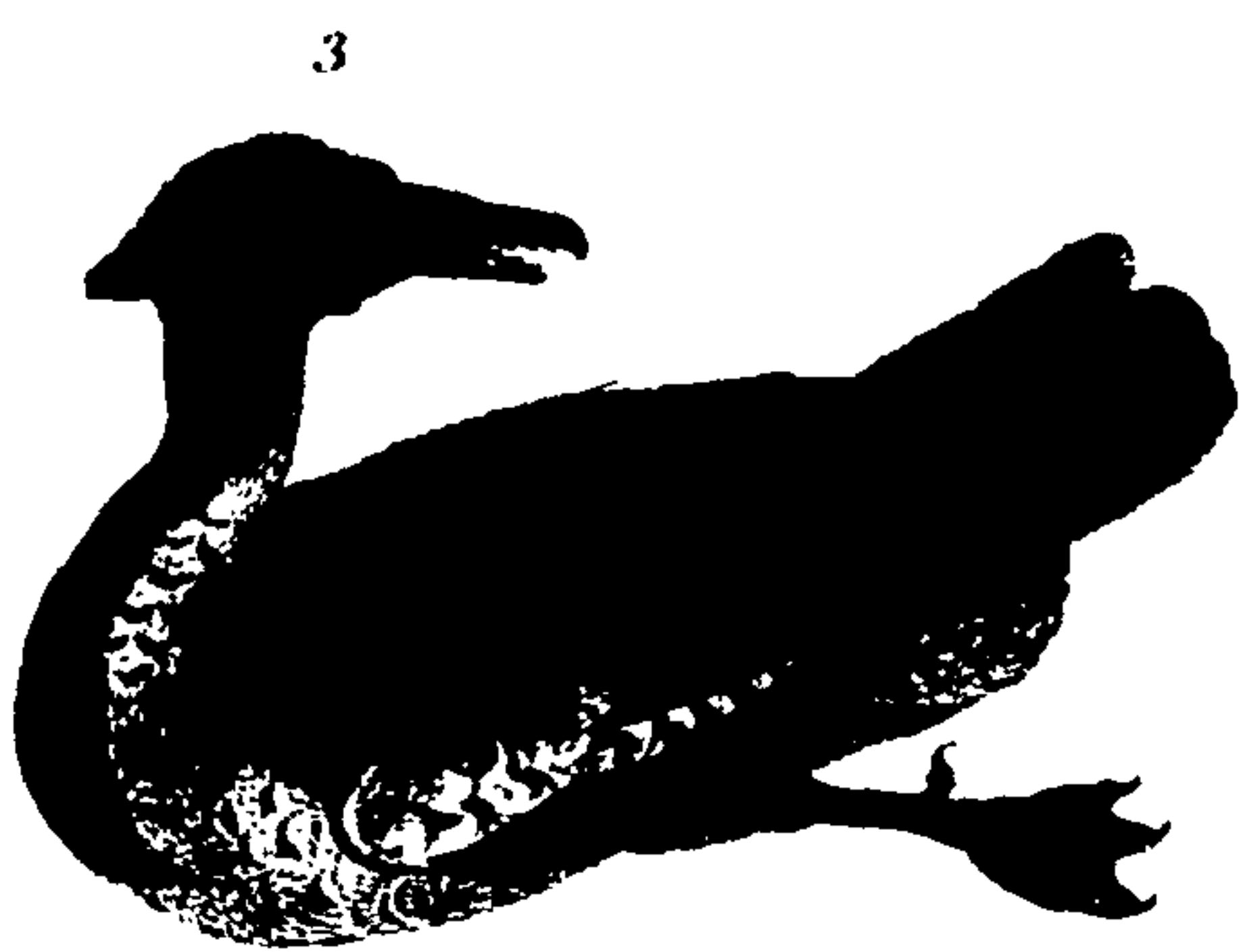
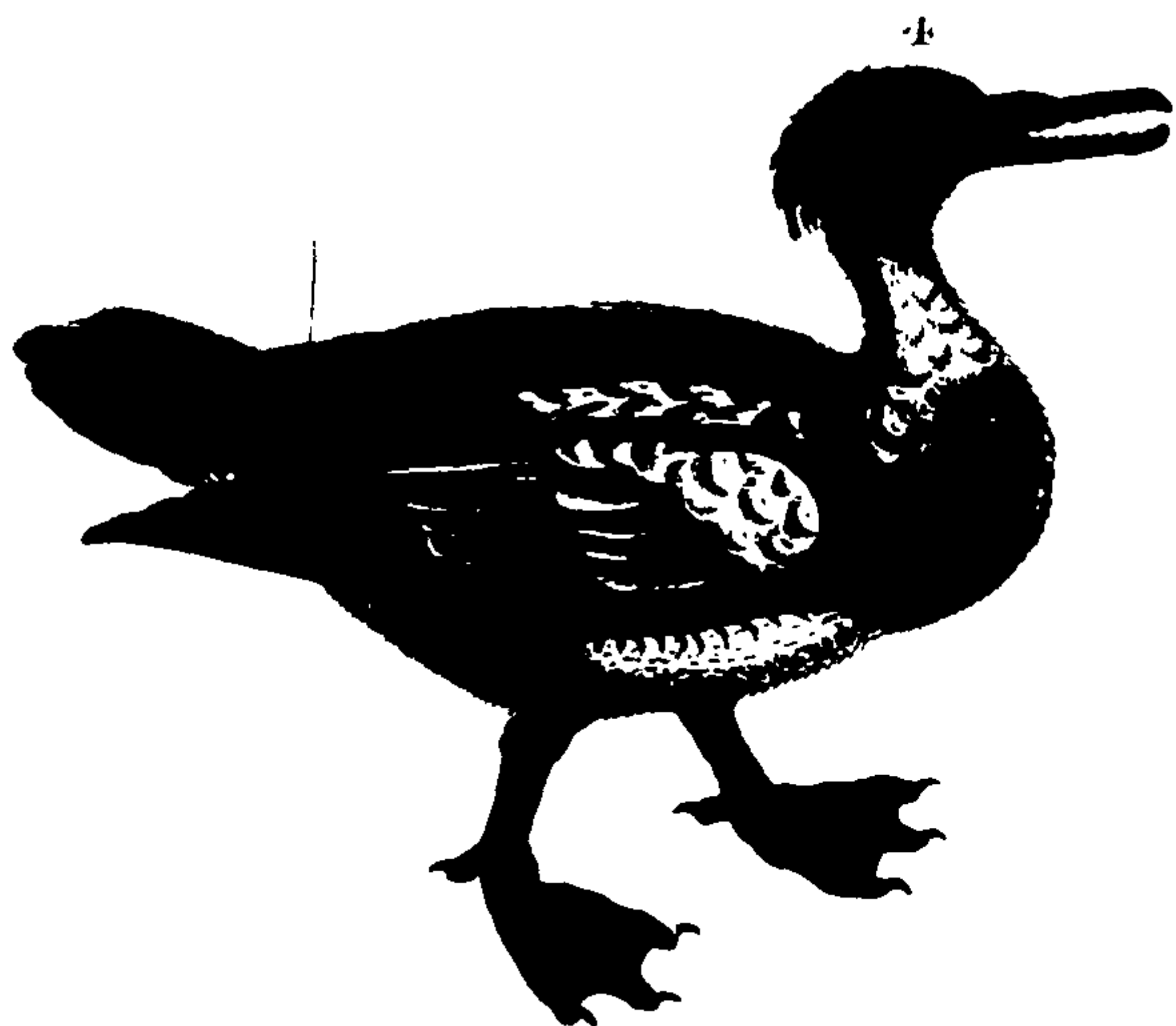
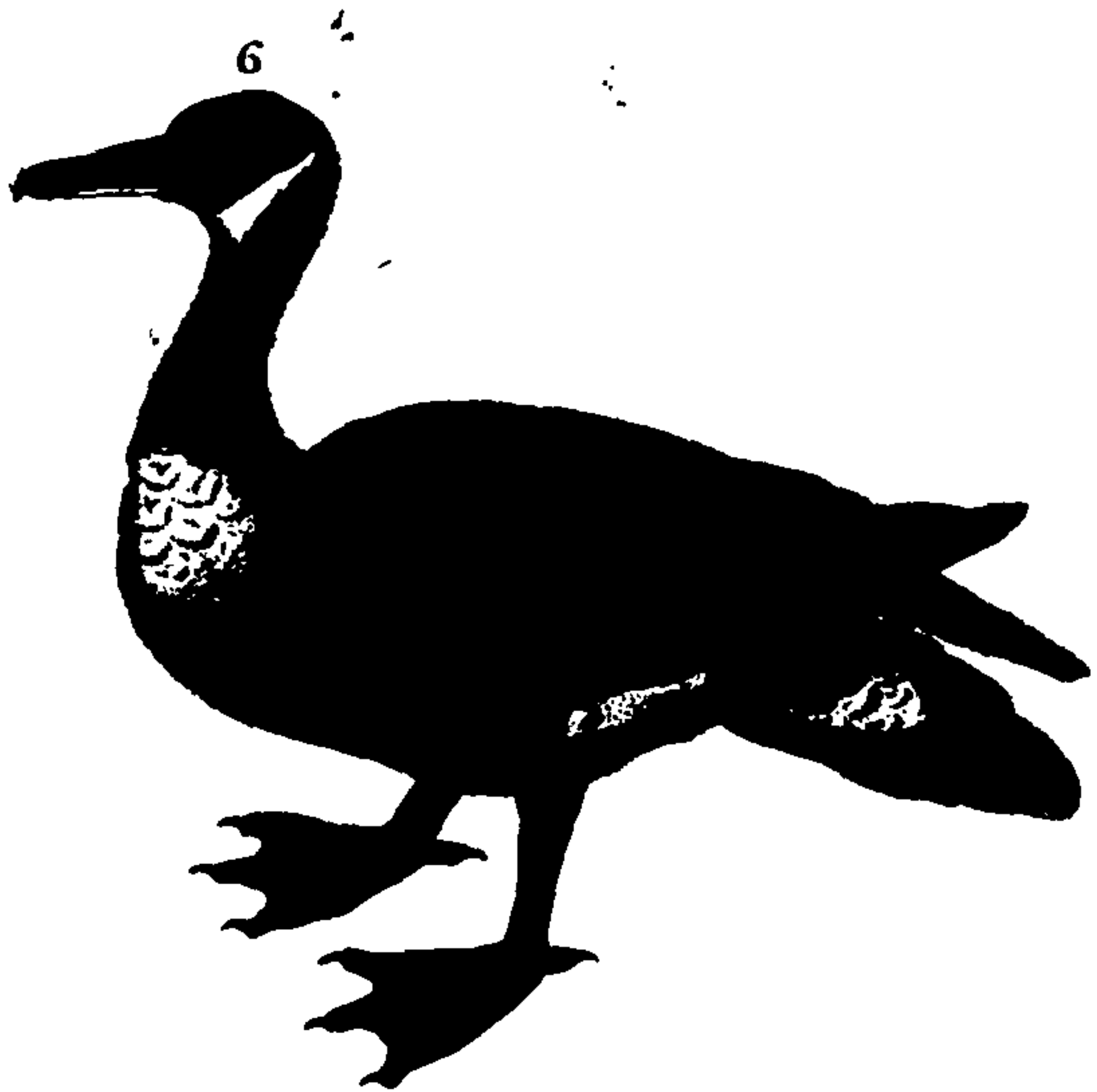
GONINON. A French appellation for the common gudgeon.

GONORYNCHUS. A species of *cyprinus*, having eight rays in the anal fin, a cylindric body, and a bifid tail. It is caught in the seas bordering on the Cape of Good Hope.

GOOSANDER. This bird frequents the rivers and lakes of Great Britain, particularly in severe winters; but it's native regions seem to lie in higher northern latitudes. It dives with great dexterity, and subsists almost entirely on fish. The length of the male is about two feet four inches, the breadth about three feet two inches, and the weight four pounds. The bill is three inches long, narrow, and finely serrated; and both that and the irides are red. The head is large; and the feathers on it's hind-part are long and loose. The colour is black, beautifully glossed with green. The upper part of the neck is of the same colour with the head; the lower part, and the belly, are a fine pale yellow; the upper part of the back, and the lower scapulars, are black; the lower part of the back, and the tail, are ash-coloured, the latter consisting of eighteen feathers. The primaries are black; the secondaries are white, some of them being edged with black; the coverts, at the insertion of the wing, are black, the rest being white; and the legs are of a deep orange-colour.

The female, which is frequently called the dundiver, and has generally been esteemed a different species, is less than the male: the head and the upper part of the neck are of an iron colour; the throat is white; and the feathers on the hind part of the head form a pendent crest. The back, the coverts of the wings, and the tail, are of a deep ash-colour; the greater quill feathers are black, the lesser being white; and the breast and belly are white tinged with yellow.

GOOSANDER, RED-BREADED. This species which breeds in Scotland and the Hebrides, weighs about two pounds; the length is one foot nine inches, and the breadth two feet seven inches. The bill is three inches long; the lower mandible is red, and the upper dusky; the irides are a purplish red, the head and throat are a beautiful varying black and green, the former being above



GOLD - FISH, 2. GOLDSINNY 3. COMMON GOOSANDER, 4. RED - BREASTED GOOSANDER
5. ANTARCTIC WHITE - WINGED GOOSE, 6. CANADA GOOSE

with a long pendent crest of the same colour. The upper part of the neck, of the breast, and the whole belly, are white; the lower part of the breast is ferruginous, spotted with black; the upper part of the back is black; and near the insertion of the wings there are some white feathers, edged and tipped with black. The exterior scapulars are black, the interior being white; the lower part of the back, the coverts of the tail, and the feathers that cover the thighs, are elegantly marked with wavy lines of black; the coverts on the ridges of the wings are dusky; the greater coverts are half black, and half white; the secondaries next the quill-feathers are marked in the same manner; and the quill-feathers are dusky. The tail is short and brown; and the legs, which are strong, are orange-coloured.

In the female, the upper part of the neck is of a deep rust-colour; the crest is short; the throat is white; the fore-part of the neck and breast are marbled with deep ash-colour; the belly is white; the great quill-feathers are dusky; the secondaries are black, white, and dusky; and the back, scapulars, and tail, are ash-coloured.

GOOSE. In the Linnæan system, this forms a distinct order of birds, including the swan, the Goose, and the duck tribes; between which there is a great similarity, particularly the duck and the Goose species, which approach so nearly to each other, that it may not be improper to mark the distinctions. The distinguishing characters of the Goose are these: its body is bigger, its wings are larger, its neck is longer, its bill is thicker at the base, its legs are placed more forwards on the body, and its rump is encircled with a white ring. By these marks the duck and the Goose kinds may be discriminated; and though the former may sometimes equal the latter in size, there still remain other sufficient and obvious distinctions.

The bill is the first great distinction of the Goose kind from all the feathered tribe. In other birds, it is round and wedge like, or crooked at the end: in all the Goose kind it is flat and broad, formed for the purposes of skimming ponds and lakes of the mantling weeds which grow on their surfaces. The bills of other birds are composed of a horny substance throughout, formed for piercing or tearing: these birds have their inoffensive beaks sheathed with a skin which entirely covers them; and are only adapted for shovelling up their food, which is chiefly of the vegetable kind.

Though birds of the Goose kind do not reject animal food when offered them, they contentedly subsist on vegetable, and seldom seek any other. They are easily provided for; and, wherever there is water, they are sure to find plenty. All the other web-footed tribes are continually voracious, and incessantly prey on; but these lead more innocent lives; the weeds on the surfaces of waters, or the insects at their bottom; the grass by the banks, or the fruit and corn in cultivated grounds; are sufficient to satisfy their gentle appetites.

As their food is chiefly of the vegetable kind, so their voracity is in proportion. Predaceous animals, whether birds or quadrupeds, are generally unfruitful. Nature, which has supplied them with powers of destruction, has denied them fertility. But the case is far otherwise with respect to those harmless animals now under consideration: they seem formed to fill up the chasms in animated nature caused by the voraciousness of

others; they breed in great abundance, and lead their young to the pools as soon as they are excluded from their eggs.

The flesh of this tribe is nourishing and wholesome. The swan was regarded as a great delicacy among the ancients; but the Goose was abstained from, as totally unfit for food. Modern manners have inverted tastes: the Goose is now become the favourite; and the swan is seldom brought to table, unless for the purpose of ostentation. At all times, however, the flesh of the duck has been in high esteem; the ancients even regarded it more highly than the moderns: we are contented to eat it as a delicacy; the ancients considered it as medicinal; and Plutarch assures us, that Cato kept his whole family in health by feeding them with duck whenever they happened to have symptoms of indisposition.

The valuable qualities of great fecundity, easy sustenance, and salubrious nourishment, have operated on man to take these fowls from a state of nature, and render them domestic. How long they have been reclaimed from their original independence, is not easily ascertained; for, from the earliest accounts, they have held their present rank. The time indeed must have been very remote; so many changes have been wrought in their colours, their figures, and even their internal formations, by human cultivation.

The different kinds of these birds, in a wild state, are simple in their colourings. When a faithful description of the plumage of a wild Goose, or wild duck, is given, it will to a feather correspond with that of any other; but, in the tame kinds, no two of any species are exactly alike: different in size, colour, and frequently in form, they appear to be the mere creatures of art; and, having been so long dependent on man for support, they seem to assume forms suited to his pleasures or necessities.

GOOSE, WILD. The Goose, in its wild state, always retains the same marks: the whole upper part is ash-coloured; the breast and belly are of a dirty white; the quill-feathers and the tail are dusky, the latter being edged with white; the bill is narrow, black at the base and tip, and red in the middle; the legs are of a salmon colour; and the claws are black.

Wild Geese are supposed to breed in the more retired parts of the north of Europe; and, at the approach of winter, to descend into more temperate regions. These birds are often seen, in flocks of fifty or a hundred, flying at very great heights, and preserving great regularity in their motions; sometimes forming a straight line; and, at others, assuming the shape of a wedge, which is supposed to facilitate their progress. Their cry is frequently heard when they are at an imperceptible distance above us; and it is probable that this is a note of mutual encouragement, as they seem to exert it when they alight during those journeys. When on the ground, they range themselves in a line, after the manner of cranes; and seem to have descended rather for the sake of rest than for any other refreshment. Having continued in this situation for an hour or two, one of them has been heard to found a kind of charge, by means of a loud note, which has been punctually attended to by the others; and the whole flock has immediately pursued their journey with renewed alacrity.

The Wild Goose, and many other varieties, agree in one common character of feeding on vegetable.

getables, and of being remarkable for their fecundity. But the tame Goose is the most fruitful of the kind: having fewer enemies, it leads a safer and more plentiful life; it's prolific powers increase in proportion to it's ease; and it is frequently known to lay upwards of twenty eggs; but the Wild Goose seldom lays more than eight.

GOOSE, TAME. The Tame Goose, like other domestic animals, varies extremely in it's colours. It seems to derive it's origin from the grey-lag, the only species which the Britons could take young and familiarize. The tame female is very assiduous in hatching her eggs; during which time she receives two or three visits every day from the gander, who sometimes drives her from the nest, and takes her place with great state and composure. When the young are excluded, the pride of the gander is inconceivable: considering himself as a champion to defend his young, and to keep off even the suspicion of danger, he pursues dogs, and even men, that never mean to molest him; and, when he has attempted to attack a mastiff, or any other animal, to whose contempt alone he is indebted for his safety, he returns in triumph to his female and her brood, screaming and clapping his wings, as if conscious of victory.

The flesh of the young Goose is certainly very agreeable food. But the value of this bird is greatly increased by it's feathers: not to mention the quills, so essentially necessary for all ranks, and in almost every situation, the feathers are highly valuable in another capacity, as the warmest and softest beds are formed of them.

Vast quantities of Tame Geese are kept in the fens of Lincolnshire, which are plucked, for the sake of their feathers, several times in a year. These feathers are a considerable article of commerce; but those of Somersetshire are most valued by the trade; as those of Ireland are reckoned the worst.

In Lincolnshire, an individual will sometimes possess a thousand old Geese, each of which will rear seven; so that, towards the end of the season, he will become master of eight thousand. During the breeding season, these birds are lodged in the same houses with the inhabitants, and even in their bed-chambers: in every apartment there are three rows of coarse wicker-pens, placed one above another; and each bird has it's separate lodge, of which it keeps possession during the season of incubation. A person, called a Goose-herd, attends the flock, and twice a day drives the whole to water; after which he conducts them back to their habitations, assisting those that live in the upper stories to ascend their nests, and taking care never to misplace a single bird.

These Geese are generally plucked five times during the year: the first plucking commences at Lady-day, for feathers and quills; and the same is renewed, for feathers only, four times more between that term and Michaelmas. The old Geese quietly submit to the operation, but the young ones are very noisy and restless. If the season proves cold, numbers of them die by this barbarous custom; particularly the young, which, though hardly two months old, undergo the same process.

Vast numbers of Geese are annually driven to London, for supplying the markets; among which are all the superannuated Geese and ganders, whose flesh proves unusually tough and dry.

Geese are very profitable to the peasant on account of their flesh, grease, and feathers. They

live on commons where no other animals could procure subsistence; and in general require very little attendance, provided they have access to plenty of water. They lay from twelve to sixteen eggs, and sit about thirty days; but, when the weather proves favourable, they hatch in about twenty-six days. After the goslings are excluded, some people keep them in their houses ten or twelve days, feeding them with curds, barley-meal, and bran; and, when they have acquired some strength, permit them to go abroad four or five hours in the day, and then take them in again, till they are large enough to defend themselves from vermin. Others put the young brood out at first, and perhaps with equal success.

GOOSE, GREY LAG. This is the largest species found in Britain. It weighs ten pounds; it's length is two feet nine inches; and the expansion of it's wings is five feet. The bill is large and elevated, and of a flesh-colour tinged with yellow; the head and neck are cinereous mixed with a light yellow; and the hind-part of the neck is a very pale yellow. The breast and belly are whitish, clouded with grey; the back is grey; the lesser coverts of the wings are almost white, the middle row being a deep cinereous; the primaries are grey, tipped with black and edged with white; the secondaries are entirely black; and the scapulars are of a deep ash-colour edged with white. The coverts of the tail and the vent-feathers are a pure white; the middle feathers of the tail are dusky tipped with white; the exterior feathers are almost wholly white; and the legs are of a flesh-colour.

This species resides constantly in the fens, where it breeds, and produces eight or nine young, which are easily tamed, and esteemed most excellent food. The old Geese which are shot are frequently plucked, and sold for tame ones; but their flesh is coarse and tough. Towards winter, they collect in great flocks; but they never migrate into any other country. Indeed, this species seems to be the origin of the domestic Goose; and is the only one which appears capable of being domesticated.

GOOSE, BEAN; the *Anas Anser Manfuctus Ferrus* of Linnaeus. This bird is about two feet seven inches in length; the extent of it's wings is nearly five feet; and it's weight is upwards of six pounds. The bill is much compressed near the end, of a pale colour in the middle, and black at the base and nail: the nail bears some resemblance to a horse-bean, and hence this species receives it's name. The head and neck are of a cinereous brown hue tinged with ferruginous; the breast and belly are a dirty white, clouded with cinereous; the sides and scapulars are a dark ash edged with white; the back is of a plain ash-colour; the coverts of the tail are white; the lesser coverts of the wings are a light grey, the middle being deeper, tipped with white; the primaries and secondaries are grey tipped with black; the feet and legs are saffron-coloured; and the claws are black.

The Bean Goose arrives in Lincolnshire in autumn, and disappears again in May. It never breeds in this country; but retreats to the sequestered wilds in the north of Europe.

GOOSE, WHITE-FRONTED; the *Anas erythrophus* of Linnaeus. This bird is frequently seen, during winter, in the marshes of Cheshire, and in all the northern world as far as Hudson's Bay.

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It disappears in this kingdom very early in the spring, none being ever seen after the middle of March.

The weight of this species is about five pounds and a half, the length two feet four inches, and the extent four feet six inches. The bill, which is elevated, is of a pale yellow colour with a white nail; the forehead is white; the head and neck are a cinereous brown, tinged with ferruginous; the coverts of the wings, and the primaries and secondaries, are somewhat darker than the head and neck; the tail is principally ash-coloured; the breast and belly are a dirty white marked with great spots of black; the legs are yellow; and the claws are whitish.

GOOSE, CANADA. This species is shaped nearly like the common tame Goose, but is somewhat longer: the bill is of a black, or deep lead-colour; the eyes are dark; the head and neck are black, except a white mark on the under-side of the former, which becomes narrower on the sides, and terminates in points about the place of the ears; the back, wings, and part of the breast and belly, are of a dark brown hue, the edges of the feathers inclining to ash-colour; and the primaries are almost black. The lower part of the back and rump is black; the upper coverts of the tail are white; and the tail-feathers are black. The fore-part of the breast, the lower belly, and the covert-feathers beneath the tail, are white; and the legs and feet are of a dark lead-colour.

GOOSE, BLUE-WINGED. This bird is smaller than the common tame Goose: the bill is two inches long, and of a red colour; the head, and the greatest part of the neck, are white; the back, the breast, and the lower part of the neck, are a dark brown; the tail is of a brownish ash-colour; and the belly and thighs are white. The legs are bare of feathers just above the knees; the three foreward toes are webbed; the legs and feet are red; and the toes are black. This species is a native of Hudson's Bay: it continues in that country during the breeding season; but, when the severity of winter renders it's subsistence precarious, it retires to more southerly climes.

GOOSE, MOSCOW. This species is three feet long from the tip of the bill to the end of the tail; the expansion of the wings is nearly five feet; and the weight is about fourteen pounds. The bill is orange-coloured, with a large tubercle of the same colour on the base of the upper jaw; the pupil of the eye is black; the irides are of a golden hue; and beneath the bill hangs a large lobe. The top of the head, and the sides of the neck, are of a dark brown hue; and the upper part of the back is of the same colour, except that the exterior edges of the feathers are somewhat lighter. The wings, and the rest of the body, are white, except a few dark feathers on the upper part of the tail, the legs and feet are of a dusky or lead colour, and the claws are black. The female differs from the male only in having a smaller tubercle on the upper mandible.

GOOSE, GAMES, OR SPUR-WINGED. This fowl bears a strong resemblance to the Muscovy duck. The bill is long and reddish; the head and belly are principally white, and the back is of a shining dark purple colour. On the head there is a red carbuncle or wart, but the most distinguishing mark is a broad spur on the first joint of the wings.

GOOSE, ANTARCTIC, WHITE-WINGED. This

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species, which is a native of the Falkland Isles, is three feet four inches long; the bill is small and dusky; the head, the neck, and the whole under-side of the body, are of a snowy whiteness; but the upper part of the back is barred with black and white. The coverts of the wings are white; the secondaries are crossed with a broad dusky bar, and another of white with a green speculum; the primaries are dusky; the middle feathers of the tail are white with a gloss of green, the rest being white; and the legs are black.

GOOSE, MOUNTAIN, OF SPITZBERGEN. This variety is about the size of the common Goose: the Gander has black and white spotted feathers; but the plumage of the Goose resembles that of the partridge.

These birds are of a gregarious nature: they build their nests in low islands with the feathers of their own bellies mixed with moss; and lay five or six eggs of a pale green hue, somewhat larger than those of the duck.

GOOSE, MOUNTAIN, OF THE CAPE OF GOOD HOPE. This species is larger than any of the European kinds; and the plumage of the wings, and the top of the head, are of a very beautiful shining green colour.

The Water-Goose of the same country resembles the common Goose in it's colours, except that it has a brownish stripe mixed with green on the back. The flesh of this and the preceding species is esteemed excellent.

GOOSE, MAGELLANIC. A name given by Clavius to a bird of the caver kind. It is a marine fowl, it grows to the size of the largest Goose, and is usually very fat. The back is black; the belly is white; and the neck, which is short and thick, is encased with a ring of white feathers. The skin is thick and rough, like that of the dog; and it has only two coriaceous fans, instead of wings, hanging from it's sides, like two arms, covered with a few feathers, partly black, and partly white. These members, though they cannot afford the animal protection by flight, are nevertheless very beneficial in swimming; and indeed this bird lives wholly in the water, except during the season of incubation.

GOOSE-BERRY-WORM. An insect frequently found among Goose-berry-bushes, usually supposed to be a caterpillar, but differing essentially from that genus of animals, being one of the fausse chenilles of the French. It has a round head, and twenty-two legs; and, finally, becomes a four-winged fly. The worm is at first of a greenish colour, with some yellow variegations, and several black tubercles; but, on the last change of it's skin, it becomes whitish or cream-coloured, and loses it's tubercles.

GOR-COCK. A bird of the gallinaceous kind, called by some the lagopus alpestris, and, by the British, the moor cock, or red grouse. It is of the shape of the partridge, but considerably larger, the beak is black and short; and there is a remarkable bare space over the eye, of a fine bright red colour, surrounded, in the male, by a prominence of the same vivid colour, equally destitute of feathers, and imbricated like a cock's comb. The male is also distinguished from the female by black plumage at the base of the bill, interspersed with frequent white spots, and on a large oval scale on one of the under claps. The male is also of a deeper red colour in every part, and, on the throat and breast, is of a fair red, without the cinnamon

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of any other colours. The head, neck, back, and wings, are all variegated with red and black; and the breast and belly are of the same colours, except that there are some variegations of white on the former. The legs and feet are covered with very long and thick plumage to the very extremities of the toes; the wings are brownish, with some reddish spots; and the tail is almost wholly black.

This bird, which generally frequents the tops of the highest hills, is very common in Derbyshire, Yorkshire, and Wales, where it feeds on mountain-berries and the tender shoots of the heath. It lays seven or eight eggs, of a mixed red and black colour; entirely covered with small spots, except one or two minute spaces near the smaller ends. The young brood follow the hen during the whole summer; but, in the winter, they join in flocks of forty or fifty, when they are remarkably shy and wild.

The Italians call this bird and the lagopus by the common name of the francolino: and indeed Ray imagines that the lagopus of Pliny and this bird are really of the same species, though different in colour; but Pennant observes, that the account transmitted by Pliny seems too brief and indeterminate to enable us to judge what species he intended; and that the Italian francolino is not the same with our grouse, seems evident from the accurate figure from the life exhibited by Edwards.

GORAIS. A name sometimes used to express the more common species of the carassius.

GOSHAWK; the *Falco Palumbarius* of Linnæus. This bird is larger than the common buzzard, and of a longer and more elegant conformation: the bill is blue towards the base, and black at the tip; the skin at the base of the bill is of a yellowish green colour; over each eye there is a long white line; and on each side of the neck a bed of broken white. The head, the hind part of the neck, the back, and the wings, are of a deep brown colour; the breast and belly are white beautifully marked with numerous transverse bars of black and white; the tail is long, and of a brownish ash-colour, marked with four or five dusky bars placed at considerable intervals; the legs are yellow; and the claws are blackish.

Willughby distinguishes this species and the sparrow-hawk by the name of short-winged hawks, because their wings, when closed, do not reach so far as the end of their tails. The Goshawk was in high estimation while falconry flourished, and taught principally to pursue cranes, geese, pheasants, and partridges. It breeds in Scotland, where it builds its nest in lofty trees: it is extremely destructive to game, darting through the woods after its prey with vast impetuosity; but if the object of its pursuit eludes its first attack, it almost immediately desists, and perches on some bough till new game presents itself.

GOURD-WORM. The English name of a species of Worm found in the intestines of several animals; and which receives its name from its resemblance to the seed of the gourd.

GOWRY. The English appellation for the cypræa; a genus of univalve shells, suboval, and blunt at each end; having the aperture the whole length of the shell, longitudinal, linear, and toothed. The inclosed animal is a slug.

GOWRY BIRD. This bird, which appears to be a native of the East Indies, is called by Albin the Chinese sparrow. The bill is of a leaden

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colour, and resembles that of the green-finch; the eyes are of a dark hazel-colour; the head, neck, beginning of the breast, back, wings, and tail, are a dark reddish brown; the fore-part of the neck has somewhat of a purplish cast; the greater quills are of a deeper brown hue than the rest of the wings; the rump is of a lighter greenish brown; the breast and the sides of the belly are black thinly sprinkled with small round white spots of the size of a rape-seed; the middle of the belly, the thighs, lower belly, and covert-feathers under the tail, are light brown or dirty white; and the legs and feet are of a blueish, or lead-colour.

GRAINING. A fish of the dace kind, caught in the River Mersey near Warrington. It bears a strong resemblance to the dace, but is more slender, and the back is straighter. Its usual length is about seven inches and a half. The colour of the back is silvery with a blueish cast; the eyes, and the ventral and anal fins, are a pale red; and the pectoral fin is a deep red.

GRALLÆ. An order of birds analogous to the bruta, in the class of mammalia, in the Linnæan system; the characters of which are these: the beak is subcylindric and somewhat obtuse; the tongue is entire and fleshy; and the thighs above the knees are bare.

This order contains eighteen genera; among which are the phœnicopterus, the ardea, the scolopax, the tringa, &c.

GRAMPUS; the *Delphinus Orca* of Linnæus. This fish is caught from fifteen to twenty-five feet in length: it is remarkably thick; and so extremely voracious, that it will not even spare the porpus, a congenerous fish. It is also said to be very inimical to the whale; and that it will hang on it, like a dog on a bull, till the animal roars through pain. The nose is flat, and reverted at the extremity; there are thirty teeth in each jaw; those before being blunt, round, and slender; the hinder sharp and thick; and between each there is a space adapted to receive the teeth of the opposite jaw when the mouth is closed. The spout-hole is in the top of the neck; and, with respect to the number of fins, this fish agrees with the dolphin. The back is black, but on each shoulder there is a large white spot; the sides are marbled with black and white; and the belly is of a snowy whiteness.

These animals sometimes appear on the British coasts; but are found in much greater numbers off the North Cape of Norway, whence they are also called the North Capers. Like the rest of the cetaceous tribes, they swim against the wind; and are observed to be much disturbed, and to run ble about with unusual violence, on the approach of a storm.

Linnæus and Artedi assert, that this species is furnished with broad serrated teeth; a quality which seems peculiar to the shark tribe: but Sir Robert Sibbald, who had an opportunity of examining and figuring the teeth of this fish, and from whom we have copied our description, gives a very different account of them.

GRANIVOROUS. An epithet given to animals which feed principally on grain: such are chiefly of the feathered kind.

GRASSHOPPER. A species of gryllus, commonly called the cicada, though under that term the ancients expressed a very different animal from that which the moderns call the Grasshopper; for whereas the insect now under consideration

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deration is sufficiently active in hopping through long grass, the cicada did not possess this power, but either walked or flew. Their notes also are very different; that of the cicada being produced by a kind of buckler placed beneath the belly of the male; and that of the Grasshopper by a transparent membrane which covers a hole at the base of its wings. There is still a greater variety in all these with regard to shape and colour: some are green, some livid, and others variegated; some have long legs, others short; some sing, others are mute; some are perfectly harmless; and others are so extremely mischievous, that they are regarded in some countries as one of the severest visitations of incensed Divinity.

None of this variegated tribe is better known to Britons than the little Grasshopper that breeds in great plenty in our meadows, and prolongs its chirping note through the summer: the history therefore of this species will sufficiently elucidate that of all the remainder.

This animal is green, except a line of brown which streaks the back, and two pale lines under the belly and behind the legs. It may properly be divided into the head, the corselet, and the belly. The head is oblong, prone, and somewhat resembles that of the horse; the mouth is covered by a kind of round buckler jutting over it, and armed with brownish teeth hooked at the points; the antennæ, or feelers, are very long, tapering off to a point; and the eyes are black and prominent. The corselet is elevated, narrow, and armed above and below with two serrated spines; the back is covered with a strong buckler, to which the muscles of the legs are firmly bound, and round these muscles the vessels of respiration are seen; the last pair of legs are much longer and stronger than the first two pair, and fortified by thick muscles extremely well adapted for leaping. There are four wings; the anterior ones springing from the second pair of legs, the posterior from the third pair; the hinder wings are much finer and more expansive than the foremost, and are therefore the principal instruments of flight. The belly, which is very large, is composed of eight rings, and terminated by a forked tail covered with a kind of down. When examined internally, besides the gullet, a small stomach is perceptible; behind that, a very large one, wrinkled and furrowed within-side; and, still lower down, a third. Thus, it seems not without reason, that creatures of this order are said to chew the cud, as they so much resemble ruminant animals in their internal conformation.

Soon after Grasshoppers assume their wings, they fill the meadows with their notes; which, like those among birds, are generally considered as the calls of courtship. The male only is vocal; and, on examining the bases of his wings, a little hole is discoverable in his body, covered with a fine transparent membrane, which is supposed by Linnæus to be the instrument of sound; while other naturalists are of opinion, that it arises from the friction of the two hind legs against each other: however that may be, no sooner is the note heard, than it is returned by another; and the two little animals, after a long contest in singing, are sometimes observed to meet and fight desperately. The female is generally the reward of victory: for, after the combat, the male follows her behind the neck with his teeth, and thus retains her for several hours, till the business of fecundation is completed; and on such occasions they are so firmly united, that it

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is almost impossible to separate them without laceration.

Towards the latter end of autumn, the female prepares to deposit her burden: her body is then observed to be greatly distended with eggs, sometimes to the number of one hundred and fifty. In order to form a proper lodgment for these in the earth, Nature has provided her with an instrument at her tail, which she can sheathe and unsheathe at pleasure: with this she pierces the earth to the greatest depth possible; and into the opening thereby made she drops her eggs one after another. The continuation of posterity being thus provided for by the female Grasshopper, she does not long survive; for, as the winter approaches, she gradually withers, and dies through a total decay. Some authors assert, that she is killed by the cold; and others, that she is consumed by worms: certain, however, it is, that neither males nor females are ever known to outlive the winter. In the mean time, the deposited eggs continue unaltered, either by the severity of the season or the delay of spring: they are oval, white, and of a horny consistence; their size nearly equals that of a grain of anise; and their internal substance is a whitish, viscous, and transparent fluid. When the genial warmth of the vernal sun begins to vivify all nature, the eggs feel his benign influence; and, generally near the beginning of May, an insect is produced from each about the size of a flea: these are at first of a whitish colour; but, at the end of two or three days, they turn black; and, soon after, to a reddish brown. From their very origin, they exhibit the appearance of Grasshoppers without wings; and hop among the grass, as soon as excluded, with surprizing agility.

The Grasshopper having continued above twenty days from its exclusion without the use of its wings, which are folded up in its body, at length prepares for its emancipation; and, in order to make the necessary dispositions for its approaching change, it ceases from its grassy food, and searches out some convenient place, under a thorn or thistle, where it may be protected from an accidental shower. It then exhibits the same laborious writhings, heavings, and palpitations, which are perceptible in all other insects at this important revolution of their lives: it swells up its head and neck; then seems to draw them in again; and thus for some time it alternately exerts its powers to get free. At length, the skin which covers the head and breast is observed to divide above the neck; the head first issues out from the bursting skin; and the efforts of the animal still continuing, the other parts follow successively: so that the little insect soon extricates itself totally from the old skin, which it leaves adhering to the plant under which the transformation was performed.

The Grasshopper, thus disengaged from its exterior skin, appears in its perfect form; but at this period it is extremely feeble, and its body so soft and tender, that it may be modelled like wax. It is now of a greenish white colour, which becomes more vivid as the moisture on the surface dries up. Still, however, the insect discovers no signs of life, but appears quite spent and overcome with its exertions. During this time, the body continues drying, and the wings unfolding to their greatest expansion; and a curious observer may perceive them, fold after fold, opening to the sun, till at last they become longer than the two hinder legs. The body

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body of the insect is also lengthened during this operation, and becomes more beautiful than before.

These insects are generally vocal in the middle of summer; and, about sun-set, their notes are much louder than during the heat of the day. They uniformly feed on grubs; and, if their bellies be pressed, they will immediately return the juices of the plants on which they have last fed. Though averse to the exertions of flight, and slow in their aerial excursions, particularly when the weather is moist or cool, they are sometimes seen to fly to considerable distances. If caught by one of their hinder-legs, they speedily disengage themselves from it, leaving the member behind: this, however, does not grow again, as is usual with crabs and spiders; for, being animals whose duration is limited to a single year, they have not sufficient time for repairing those accidental misfortunes. The loss of their legs also prevents them from flying. When roughly handled, they bite with great severity; and, in the act of flying, make a particular noise with their wings.

Such are the habits and nature of those little vocal insects, which swarm in our meadows, and enliven the scene. The larger kinds differ from them only in size, in rapidity of flight, and their powers of injuring mankind by the devastations they commit on the produce of the earth. See **LOCUST**.

GRAY. A provincial appellation for the badger.

GRAY is also used in some provinces to express a species of wild duck, more commonly known by the name of the gadwall.

GRAYLING, or **UMBER**; the *Salmo Thymallus* of Linnaeus. This is a very voracious fish, and eagerly seizes a bait. It swims with rapidity, disappears like the transient passage of a shadow, and from thence has probably received the name of Umbra. Its figure is elegant; the body, which is longer and flatter than that of the trout, seldom exceeds eighteen inches; the head is dusky; the coverts of the gills are of a glossy green colour; the back and sides are a fine silvery grey, whence it receives the name of Grayling; but, when the fish is just caught, they are slightly varied with blue and gold. The lateral line is straight; the scales are large, their lower edges being dusky, and forming regular rows from head to tail; the top of the back fin is red, the lower part being a bluish purple; the ventral fins are bluish, spotted with black; and the tail is much forked. The lips are rough like a file; the tongue is smooth; and the gills are quadruple.

The Grayling haunts clear and rapid streams, particularly those flowing through mountainous countries. It is found in the rivers of Derbyshire, in some of the more northern streams; in the Humber, the Dove, the Trent, the Derwent, the Wye, and the Lug. It is also very common in England, where the inhabitants make use of its entrails instead of runnet, to curdle the milk of the red deer. Its flesh, which is firm, wholesome, and agreeable, may be eaten at all seasons of the year, but is in its greatest perfection in the month of December.

GREBE. In the Linnæan system, the Grebe is a species of the *Colymbus*, comprehending several varieties, the distinguishing characters of which are these: the bill is long, straight, and sharp-pointed; there is no tail, and the legs are flat,

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thin, and serrated behind with a double row of notches.

GREBE, GREAT-CRESTED; the *Colymbus Cristatus* of Linnaeus. This species weighs about two pounds and a half; its length is twenty-one inches, and the expansion of its wings thirty. The bill, which is upwards of two inches long, is red at the base and black at the point; between the bill and the eyes there is a stripe of black naked skin; the irides are of a fine pale red colour; and the head is adorned with a large dusky crest, separated in the middle. The cheeks and the throat are surrounded with a long pendent ruff of a bright tawny colour edged with black; the chin is white; above the eye there is a white line; the hind-part of the neck, and the back, are of a sooty hue; and the rump is covered with long soft down, which supplies the place of a tail. The covert-feathers on the second and third joints of the wings and the secondaries are white; all the other wing-feathers are dusky; the breast and the belly are of a most beautiful silvery white colour, glossy as satin, and extremely elegant; the plumage under the wings is dusky, blended with tawny; the outside of the legs, and the bottom of the feet, are dusky; and the insides of the legs, and the toes, are a pale green.

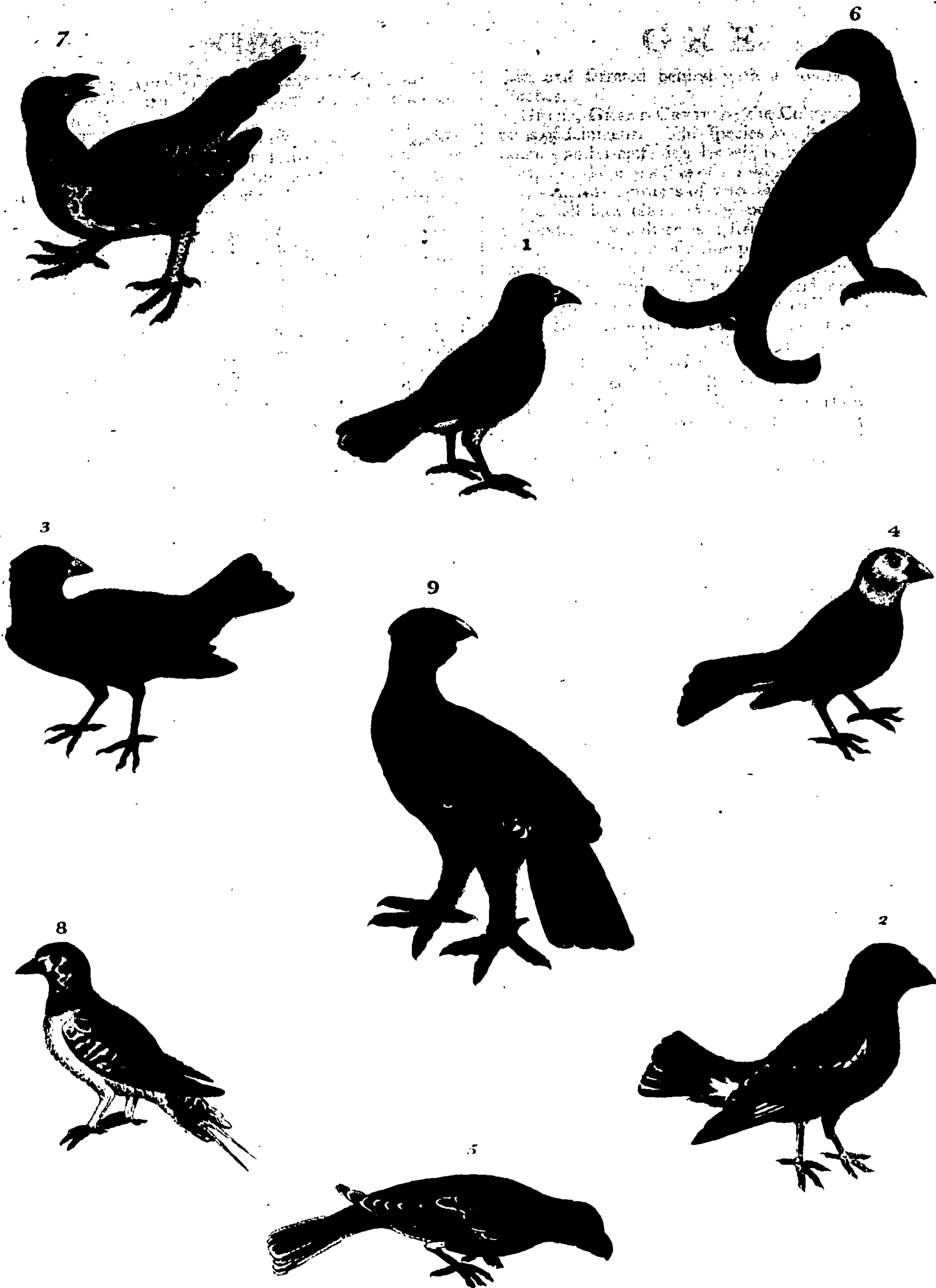
This bird, from the shortness of its wings and feet, being ill adapted for flying or walking, seldom quits the water, and chiefly inhabits those broad shallow pools where its faculty of swimming can be turned to the greatest advantage in fishing. It principally frequents the meres in Shropshire and Cheshire, where it breeds among reeds and flags, in a floating nest kept steady by the weeds of the margin. The female is said to nurse her young very carefully, being observed to feed them most assiduously with small eels; and, when fatigued, to carry them on her back, or under her wings.

This species preys on fish, and is almost perpetually diving. It shows only its head above the water; and is very difficult to be shot, as it sinks on the most distant appearance of danger. It is never seen on land; and, though very frequently disturbed, it never quits the lake where, by diving and swimming, it is taught to expect food and security.

The Grebe is chiefly sought after for the skin of its breast, the plumage of which is made into tip-pets. But the skins of these birds are out of season about February, when they lose the brightness of their colour; and, during the time of incubation, their breasts are entirely bare. Their flesh is excessively rank; but the fat is esteemed highly efficacious in rheumatic pains, cramps, and paralytic contractions.

GREBE, LESSER, CRESTED, OR FARTED; the *Colymbus Auritus* of Linnaeus. This species is about a foot long, and twenty-two inches broad; the bill is black, slender, and slightly recurved; the head and neck are black; the throat is spotted with white; the whole upper side is of a blackish brown colour, except the ridge of the wing above the first joint, and the tips of the quill-feathers, which are white, and the breast, belly, and inner coverts of the wings, are white. A tuft of long loose feathers hangs backwards, on each side, behind the eyes; the irides are crimson-coloured; a bare stripe of red extends from the bill to the eyes; and the legs are a dusky green.

These birds breed in the fen near Spalding in Lincolnshire,



1. GRENADIER. 2. COMMON GROSS-BEAK. 3. BLUE GROSS-BEAK. 4. MALACCA GROSS-BEAK. 5. PINE GROSS-BEAK. 6. BLACK GROUS. 7. LONG-TAILED GROUS. 8. PIN-TAILED GROUS. 9. WOOD GROUS.

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Lincolnshire; they build their nests in the same manner as the greater-crested Grebe; and lay four or five small white eggs.

GREBE, TIPPET; the *Colymbus Urinator* of Linnæus. This species has sometimes been seen in Cheshire, but is by no means common in England. The Tippet Grebes chiefly frequent the Lake of Geneva, where, during the winter season, they appear in flocks of ten or twelve; and the inhabitants of the margins of the lake kill them for the sake of their beautiful skins. Their undersides, being dressed with the feathers adhering to them, are manufactured into muffs and tippets; and each bird is valued at about fifteen shillings.

The Tippet Grebe differs from the great-crested Grebe in being somewhat less, and in wanting the crest and ruff. The sides of the neck are striped downwards from the head with narrow lines of black and white; but, in other respects, the colours and marks exactly correspond with those of the great-crested Grebe.

GREBE, DUSKY AND WHITE; the *Colymbus Minor* of Brisson. This bird is about the size of the teal; and the bill is somewhat more than an inch long. The crown of the head, and the whole upper part of the body, are dusky; the inner coverts, the ridge of the wing, and the middle quill-feathers, are white, all the rest of the wing being dusky; and the belly and thighs are white, except a few black spots on the latter. A bare skin of a fine red colour unites the bill to the eye; and, in some birds, the whole neck is ash-coloured. This species inhabits the Lincolnshire fens.

GREBE, LITTLE. The length of this bird is ten inches, the breadth sixteen inches, and the weight about six or seven ounces. The head is thick-set with feathers, which, on the cheeks of old birds, are of a bright bay colour; the top of the head, the neck, breast, and whole upper-side of the body, are a deep brown tinged with red; the greater quill-feathers are dusky; the belly is ash-coloured mixed with a silvery white; and the legs are a dirty green.

These birds dive with great celerity, and remain a long time under water: they feed on fish and aquatic plants; and frequent rivers, forming their nests in the water near the banks. The female lays five or six white eggs, which she always covers when she quits the nest. The manner in which they are hatched is really astonishing: the water constantly rises through the nest, and keeps them perpetually wet; but the natural warmth of the bird bringing on a fermentation in the vegetables, which are at least a foot thick, makes a bed sufficiently hot for the purpose.

GREEN-FINCH; the *Loxia Chloris* of Linnæus. This bird is somewhat larger than the common sparrow. The upper chap of the bill is of a dusky colour, and the lower is whitish; the head and back are of a yellowish green hue; the rump is a fine yellow; but the breast is paler, and shaded with green; and the belly is white. The edges of the exterior quill-feathers are yellow, the next being green, and the farthest grey; the tail is about two inches long, and slightly forked; the two middle feathers are dusky; and the exterior webs of the four outermost feathers on both sides of the tail are yellow. The colours of the female are much less vivid than those of the male.

The Green-Finch is one of the most common birds in this country. It produces its young about the middle of May; builds its nest in the

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hedges, of hay, stubble, grass, and moss, lined with feathers, wool, and hair; and lays five or six eggs of a pale green colour, sprinkled with small reddish spots, which are most numerous at the larger ends. The length of this bird, from the end of the bill to the extremity of the tail, is about six inches and a half; the bill is half an inch long; and the whole weight is sixteen drams.

Though Green-Finches are frequently kept in cages, they are not much esteemed for their singing; yet some of them, if brought up from the nest, will learn to imitate the songs of most other birds. They are tamed with amazing facility; and, in a few minutes after they are taken, will eat from a person's hand. At the beginning of winter, and in severe seasons, they assemble in flocks, and may be caught with the clap-net in great numbers. The young may be taken from the nest when about ten days old, and are easily reared.

GREEN-FINCH, RED-HEADED. This curious species, first described by Edwards, is a native of Surinam. The bill is of a light brown colour; the head is red, inclining to a high-coloured orange; round the neck there is a yellow ring, which points upwards a little under the bill; the neck, back, wings, and tail, are of a fine parrot green; the greater quills are dusky towards their extremities; on the upper part of the wing there is a yellowish spot; the breast and belly, as low as the thighs, are of a pleasant light blue colour; the upper part of the thighs, the lower belly, and under the tail, are green; part of the thighs next the legs are yellow; and the legs, feet, and claws, are of a light brown hue.

GREEN-FINCH, INDIAN. This Finch, with respect to its shape, greatly resembles the Canary-bird; and, like it, is much valued for its song. The bill is thick, strong, and short; the upper mandible is of a dark brown hue, the lower being considerably lighter; and the eyes are hazel-coloured. The top of the head, the upper side of the neck, the back, the wings, and the tail, are of a dirty green colour; the exterior webs of six or seven of the primaries are edged with white; the tail-feathers are bordered with a light yellow green; from the base of the bill, on each side, passes a bar of a dull green colour through the eyes; and from the angles of the mouth, on each side, springs a black line half an inch in length. The whole under-side, from the bill to the covert-feathers beneath the tail, is yellow, a little shaded with green on the sides of the breast and belly; and, on the sides of the neck, the yellow and green lose themselves in each other. The legs, feet, and claws, are of a brownish ash-colour. This bird, which is a native of the East Indies, was first figured and described by Edwards.

GRENAÐIER. The Grenadier, which is an African bird, and a native of Angola, has a thick, short, dusky bill, terminating in a point; the forepart of the head is black; and the same colour surrounds the eyes, and reaches as far as the ears on the sides of the head. The hinder part of the head, and the whole neck, are a bright orange, as well as the lower part of the back and rump. The middle of the back, and the upper sides of the wings and tail, are a dirty brown inclining to black; each feather being fringed on the edge with a lighter brown, which towards the tips becomes wholly dusky. The belly, as far as the legs, is black; but the thighs, the lower belly, and the covert-feathers under the tail, are whitish, and

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the legs, feet, and claws, are of a whitish flesh-colour. This bird has a very disagreeable note, which somewhat resembles the winding up of a clock. It is a very bold animal, and will fight with great resolution through the wires of its cage, whence it probably receives its name.

GRESLING. An appellation given by the Germans to the *gobius fluviatilis*, or common gudgeon.

GREY; the *Salmo Eriox* of Linnæus. This large fish, of the truttaceous kind, is caught in many of the British rivers. It often grows to the full size of the salmon; but differs from that species in having a broader body, and a head larger in proportion. In the jaws are four rows of teeth, and on the tongue eight single teeth; the back and sides, above the lateral line, are of a deep grey colour spotted with purple; the belly is silvery; and the tail is even. The flesh is more delicious than that of the salmon, and always fetches a better price. The Grey ascends the fresh water rivers in the month of August, but is never found in great plenty.

Pennant seems to consider this fish as synonymous with the sewin, or shewin, of South Wales, which is very common in the vicinity of Caermarthen. The Grey continues in the Esk from July to September, and is then in spawn. When it becomes out of season, the lower jaw is hooked. The natives of the north of England, and of South Wales, consider this fish as a distinct species from the salmon.

GREY-FINCH. See **FINCH**.

GREY-FLY. An appellation frequently given to the gad-fly.

GREY LAG GOOSE. See **GOOSE**.

GREY GRUNT. This fish has a broad crooked back, and is about six inches long and four broad. The mouth is furnished with very small teeth; the eyes are large; and the irides are white. The dorsal fin runs the whole length of the back, and is spiny in the middle, and soft at the extremity. All the fins, as well as the tail, are of a shining gold-colour; and the body is covered with silvery scales, mixed with a golden tinge. On each side are seven large longitudinal stripes of a shining brown; but, in some, of a gold-colour. This fish is caught near the island of Jamaica, and in several other parts of the West Indies.

GREYHOUND. See **DOG** and **HOUND**.

GRIG. A name frequently used to express the sand-eel, or ammodytes. These fishes, which are ordinarily found in the River Thames, are distinguished from the common sort by having larger heads, blunter noses, thicker skins, and less fat: each fish seldom exceeds three or four pounds in weight; and they are not very highly esteemed.

GRINETTA. An aquatic fowl of the gallinula or moor-hen kind, having open feet without any annexed membranes. This bird, the *Rallus Porzana* of Linnæus, is smaller than the moor-hen and the water-rail; the legs are of a dusky green colour; the toes are very long; the beak is compressed sideways, short, pointed, and covered at the origin with a deep yellow substance; the head is brown spotted with black; the neck is a deep olive marked with white; a broad grey bar extends from the bill beyond the eyes; the back-feathers are black next their shafts, then olive-coloured, and edged with white; and the scapulars are olive, finely marked with two small white spots on each web.

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This bird, which is common in Italy and Germany, but migratory in England, frequents the margins of small streams, concealing itself among bushes.

GRISLAGINE. A fresh-water fish of the cyprinus kind, common in the rivers of Germany, having whitish fins, and eleven rays in the anal fin. Its shape somewhat resembles that of the common roach; its back is of a dusky blue colour; and its belly and sides below the lateral lines are of a silvery whiteness. Its side-lines are yellow and dotted; over which there is an interrupted blackish line, running into several oblong streaks from the gills to the tail.

GRISOLA. A bird of the lark kind, described by Aldrovandus, and supposed by Ray to be the same with the spipoletta, or tordino, of the Venetians.

GRONDEUR. The French appellation for an American fish furnished with very remarkable teeth, which, on examination, have been found perfectly to resemble the *bufonitæ*, or serpents-eyes; and which, in their fossil state, have for many ages been accounted gems. The arrangement of these teeth is such, that the whole flat surfaces of the upper and lower jaws are in a manner paved with them. They are of different shapes and sizes in distinct parts: those placed towards the edges are of the small and flat kind commonly found in Malta, and called serpents-eyes; towards the middle, the larger toad-stones, as they are called, are situated; the largest of all being arranged in two straight rows or lines along the centre of each jaw. Each of these teeth is articulated by a gomphosis in the jaw; and, when taken out, they have all that natural cavity which is observed in the hinder part of the fossil ones. The sockets of these teeth exhibit the appearance of those from whence the teeth have frequently been shed; and it is probable that the fish renews them frequently during the course of its life.

GROSS-BEAK; the *Loxia Coccythraustes* of Linnæus. This bird, which is also called the Haw-finch, is about seven inches in length, and thirteen in breadth; and weighs about two ounces. The bill, which is shaped like a funnel, is strong, thick, and of a dull pale pink colour, having some orange-coloured feathers at its base; the irides are grey; the cheeks, and the crown of the head, are a fine deep bay; a black line extends from the bill to the eyes; and the breast and belly are of a dirty flesh-colour. The neck is cinereous; the back, and the coverts of the wings, are a deep brown; the coverts of the tail are a yellowish bay; the great quill-feathers are black, spotted with white on their inner webs; the tail is short; and the legs are flesh coloured.

The greatest peculiarity of this bird consists in the shape of the ends of the middle quill-feathers, which, as Edwards justly observes, resemble the figure of some of the ancient battle-axes: the feathers, which are glossed over with a rich blue, are less conspicuous in the female; and in both the colours are in general less vivid than those of the male.

The Gross-Beak is a more strictly migratory bird, visits this country only in the winter. It feeds on berries, and even on the kernels of the hardy flowers, such as those of cherries and almonds, which it cracks with the utmost ease; its bill, from its great strength and thickness, being well adapted for this purpose. Willoughby informs us that

that this bird is common in Italy and Germany, where it lives in the woods during the summer season; and breeds in hollow trees, laying five or six eggs; but that it frequents the plains in the winter.

GROSS-BEAK, PINE. This species frequents Hudson's Bay, Sweden, and Scotland. It feeds on the pine-tree; and, according to Linnæus, sings in the night-time. It is nearly twice as large as the bull-finch: the bill is strong, dusky, and forked at the end; the head, back, neck, and breast, are of a rich crimson colour; the bottoms of the feathers are ash-coloured; the middle of those on the head and back are black; the lower belly and the vent are ash-coloured; the lesser coverts of the wings are dusky, edged with orange; the next are fringed with a broad stripe of white; the quill-feathers and the tail are dusky, their exterior edges being a dirty white; and the legs are black. There seems to be a general agreement, with respect to colours and food, between this bird and the cross-bill. Edwards calls it the greater bull-finch, to which he was probably led by the similarity of their colouring.

GROSS-BEAK, GAMBIA. This bird is about the size of the haw-finch: the bill is large, and broad at the base, terminating in a sharp point, and resembling the figure of a cone; the mouth is large, and ash-coloured internally; the pupils of the eyes are black, surrounded with a white iris; the head, and the greatest part of the neck, are black, ending in a circular black point on the fore-part of the breast; the rest of the body, the wings, and the tail, are a beautiful yellow shaded with a bright green; and the legs and feet are cinereous, with a blueish gloss.

These birds abound on the coast of Guinea, in Africa, near the River Gambia.

GROSS-BEAK, PURPLE. This species, which is about the size of the sparrow, is adorned with red streaks over the eyes, on the throat, and near the vent under the tail; all the rest of the body being of a deep purple colour. The female has the same red streaks as the male, but her body is brown. This bird is a native of the Bahama Islands.

GROSS-BEAK, BLUE. This variety is about the size of the common Gross-Beak, or haw-finch: the bill is strong, thick at the base, sharp-pointed, and of a lead colour; the eyes are a dark hazel, with black pupils; the bill is encompassed with black feathers, narrow on the forehead, and reaching on the sides as far as the eyes; the head, neck, rump, back, lesser coverts of the wings, and all the under-side, are of a fine deep blue colour; on the hind-part of the head there is a small crest; the quills in the wings, and the row of covert-feathers next to the throat, are black; but those next the back, and the succeeding row of coverts, have blue edges. The tail is black on the upper part, and blue on the under; and the legs and feet are of a proportion to the size of the bird, and of a dark lead-colour. This bird is a native of Angola, in Africa.

GROSS-BEAK, MALACCA. The Malacca Gross-Beak has a round bill, of a lead colour, and the under-side of the wings is of a light ash-colour; the back, rump, and tail, are of a chestnut hue; the throat, breast, and the whole under-side, are dusky or blackish; and the legs and feet are flesh-coloured.

GROSS-BEAK, GREEN. This bird, which is a

native of Jamaica, is somewhat less than the sparrow: the bill is thick and short; the head, neck, breast, and upper part of the belly, are of a light grey colour; the vent, and the lower part of the belly and thighs, are a fine light yellow; the wings and tail are dusky; and the legs are a light brown.

GROSS-BEAK, LINULATED. This curious bird has a blueish bill; the crown of the head, the hind-part of the neck, the back, and lesser coverts, are of a pale brown colour marked with semicircular lines of black; and the cheeks are a plain brown, bounded beneath with a rich crimson line joined to another of black. The primaries and the tail are brown; the breast and belly are a pale brown slightly marked with semicircular lines; and the legs are flesh-coloured.

GROSS-BEAK, BROWN. The bill of this species is dusky; the head, neck, back, and wings, are brown, obscurely marked with narrow dusky lines; the belly is white; the tail is dusky, or deep brown; and the legs are blueish.

GROUNDLING. The English appellation for a small species of the cobitis, more commonly called the loach; and by Artedi denominated the smooth spotted cobitis with a cylindric body.

GROUS. A general name comprehending several species of birds classed by Linnæus under the genus of tetrao. Their distinguishing characters are, that they have short arched bills; that their exterior and interior toes are connected to the first joint of the middle toe by a small membrane; that their legs are feathered down to their feet; and that they have broad scarlet eye-brows.

Grouse, Wood; the Tetrao Urogallus of Linnæus. The male of this species is two feet eight inches long, and three feet ten inches broad; and sometimes weighs fourteen pounds. The bill is of a pale yellow colour; the nostrils are covered with dusky feathers; the head, neck, and back, are elegantly marked with slender lines of grey and black running transversely; the feathers on the hind-part of the head are long; and beneath the throat there is a large tuft of long feathers. The upper part of the breast is of a rich glossy green hue; the rest of the breast and the belly are black, mixed with some white feathers; the sides are marked like the neck; the coverts of the wings are crossed with undulated lines of black and reddish brown; the exterior webs of the greater quill-feathers are black; and at the insertion of the wings appears a white spot. The tail consists of eighteen black feathers, marked on each side with a few white spots; the legs are covered with brown feathers; and the edges of the toes are pectinated.

The female has a dusky bill and a red throat; the head, neck, and back, are marked with transverse bars of red and black; the breast is adorned with some white spots, the lower part being of a plain orange-colour; the belly is barred with pale orange and black; the tips of the feathers are white; the plumage of the back, and the scapulars, are black, the edges being mottled with black and plain reddish brown; the scapulars are tipped with white; and the tail is of a deep rust colour, barred with black tipped with white, and consisting of sixteen feathers. The female is considerably smaller than the male.

This diversity between the male and female has induced some authors to consider them as two different species, and Götter calls the male the pyrgallus major, and the female pyrgallus minor.

The Grouse is discovered in no other part of Britain

Britain but the Highlands of Scotland, where it is known by the name of the capercalze; and, in the old law-books, it is called caperkally, or the horse of the woods. It frequents woody and mountainous countries, feeding on the tops of pine and birch-trees, and the berries of the juniper. In the spring, it invites the female to it's haunts with a loud and shrill voice; and at that season is so very inattentive to it's own preservation, as to be easily shot. It stands perched on a tree, and descends to the female on her first appearance. The hen lays from eight to sixteen eggs; eight at the first, and more as she advances in age.

The flesh of these birds, which are common in Scandinavia, Germany, France, and several parts of the Alps, is generally reckoned well-tasted.

GROUS, BLACK, the Black-game, Heath-cock, or Black-cock; the Tetrao Tetrix of Linnæus. The male has a dusky bill; the plumage of the whole body is of a black colour, glossed over the neck and rump with a shining blue; the coverts of the wings are a dusky brown, the inner coverts being white; the thighs and legs are covered with dark brown feathers, the former having some white spots; the tail, which consists of sixteen black feathers, is much forked; and the feathers under the tail are pure white.

The weight of the black-cock is about four pounds; his length one foot ten inches; and the expansion of his wings two feet nine inches. The female weighs about two pounds; the head and neck are marked with alternate bars of dull red and black, and the breast with dusky black and white; the back, the coverts of the wings, and the tail, are of the same colour with the neck; the inner coverts of the wings are white, in both sexes forming a white spot on the shoulder; and the tail, which consists of eighteen feathers variegated with red and black, is slightly forked.

Like the former species, these birds are fond of mountainous situations. They feed on bilberries, and other mountain-fruits; and, in winter, on the tops of the heath. They never pair: but in the spring the male crows and claps his wings from some eminence; on which signal all the females within hearing resort to him.

The hen seldom lays more than six or seven eggs. The young males quit her at the beginning of winter; and keep in flocks of seven or eight till the spring, during which time they inhabit the woods.

There is another variety of the Black Grouse, which differs from the common sort in being spotted on the neck, breast, wings, and thighs, with red. It seems to be the Tetrao Hybridus of Linnæus; and is called by Brisson le coq de bruyere piquete, or spotted black-cock.

GROUS, RED; the Red-game, Gor-cock, or Moor-cock. The male of this species weighs about nineteen ounces; the length is fifteen inches and a half; and the breadth is twenty-six. The bill is black; the irides are hazel-coloured; the throat is red; the plumage on the head and neck is a light ruddy red, each feather being marked with several transverse bars of black; the back and scapulars are a deeper red, and on the middle of each feather is a large black spot; the breast and belly are of a dull purplish brown colour, crossed with numerous narrow dusky lines; the quill feathers are dusky; the tail consists of sixteen feathers entirely black, except the four middlemost, which are barred with red; the thighs

are a pale red, obscurely barred with black; the legs and feet are cloathed down to the claws with thick, soft, white feathers; and the claws are whitish, very strong, and broad.

The female is considerably less than the male, weighing only fifteen ounces. Her colours in general are less vivid; her breast and belly are spotted with white; and the tips of some of the covert-feathers are of the same colour.

This species seems peculiar to Britain, as it is only mentioned by natives of this country, or at least is described by others as a bird belonging to this island.

These birds pair in the spring, and lay from six to ten eggs. The young brood follows the hen during the whole summer; and in winter they unite in flocks of forty or fifty, and become remarkably shy and wild. They are never seen in the vallies, but always keep on the summits of hills, where they feed on mountain-berries and the tops of heath.

GROUS, WHITE, the White-game; the Tetrao Lagopus of Linnæus. See PTARMIGAN.

GROUS, LONG-TAILED. This bird, which is about the size of the pheasant, is common to Hudson's Bay and other northern parts of America. The bill is dusky; the head and neck are of a bright reddish brown colour, variegated with transverse waved dusky lines; above and beneath each eye, and on the under-side of the head, the feathers are light brown; the plumage of the back, wings, and tail, is black in the middle, indented with bright brown on the sides, and transversely marked with black and brown at the tips; the covert-feathers within-side the wings are dusky and white mixed in transverse lines; the outward coverts of the wings, and the quill-feathers next the back, have white tips; and the primaries have spots of white along their outer webs. The two middle feathers of the tail are considerably the longest, the rest gradually shortening on each side; the breast, from being brown on it's upper part, by degrees becomes white; as do the belly, the sides under the wings, and the covert-feathers under the tail. The legs are covered with fine fili-form feathers of a whitish brown colour transversely variegated with dusky lines; the toes and claws are dusky; and each toe is pectinated on both sides.

GROUS, LITTLE, PIN-TAILED. This species is about the size of the partridge, though it's shape is more like that of the dove: the wings, when closed, measure eight inches; the bill is of a brown, or horn-colour, darkish at the point, and shaped much like that of the common hen; the head is ash-coloured, but round the eyes it is tinged with orange; above the legs there is a black line; and the throat, from the bill downwards about an inch, is also black. The lower part of the neck before has a semilunar, orange-coloured mark, bordered above and beneath with narrow black lines; the remainder of the breast and belly, the thighs, the fore-part of the legs, and under the tail, are covered with white feathers; the coverts beneath the tail are mixed with a little black and reddish brown; and the hinder part of the neck and back is covered with brownish feathers, having their tips more yellow and light, and the middle parts shaded by dusky transverse lines. The rump, and the upper part of the tail, are more regularly marked with transverse lines of orange and black, the side-feathers of the tail are tipped with

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with white, and become gradually shorter from the centre; but the two middlemost feathers are much longer than any of the rest, very narrow, and of a dusky colour. The covert-feathers of the wings are beautifully variegated with arch lines of an orange and coffee colour, their tips being white; the quills next the back are of the same colour with the back itself, and the rest are a dark ash-colour, becoming gradually black towards their tips; the fore-parts of the legs are covered with white feathers, like hair; and the feet are bare, and ash-coloured.

This species, which is found in the vicinity of Aleppo, was first described by Dr. Ruffel.

GRUB. The English name of the hexapode worms or maggots hatched from the eggs of beetles. They are excellent bait for several species of fishes. See *SCARABÆUS*.

GRUB, BOX, OR BOX PUCERON. A kind of insect approaching to the nature of the puceron of the elder and other trees; but differing from that animal in some essential characters, which refer it more properly to the same genus with the fig-insect, or false puceron.

These insects frequently change their skins and colours, after the manner of pucerons. At first they are reddish, and extremely small; after this, they divest themselves of their skins, and become yellowish; then of a deeper yellow, spotted with black; and, finally, when at their full growth, they are greenish, with black antennæ. The exuviae which these creatures leave behind them have often a small portion of their excrements affixed to them.

Reaumur, who was indefatigable in his exertions to know the history of these minute insects, found that they finally became flies of a peculiar kind, resembling those of the fig-insect: they hopped after the manner of grasshoppers, but with very short bounds; and the genitals of both sexes were easily perceived in the different individuals; though he was never able to discover any eggs, or embryo worms, in the female.

GRUINA. An appellation given by some authors to the tipula, or father-long-legs; so called from the similarity of its legs to those of the crane.

GRUNDEL, OR GRUNDLING. A provincial appellation for the common loach; a small fresh-water fish known among authors by the names of cobitis and fundulus.

GRUNDLING. A German name for the gobio fluviatilis, or common gudgeon.

GRUNDULUS. A classical term for the grundling, or loach, a species of the cobitis; and distinguished by Artedi under the name of the smooth-spotted cobitis with a cylindric body.

GRUNNIENS PISCIS, OR GRUNTING FISH. This fish, which is caught in many parts of the oriental seas, is by the Dutch called Knorre Pot. It seems to be of the gurnard kind, and nearly related to the guabi-coara of the Brazilians. When first taken out of the water, it makes a remarkable grunting noise, from which circumstance it derives its name. It has two lateral lines on each side running from the gills to the tail, one of them being brown and the other yellow; it is covered with very small scales; and is a very fat and fleshy fish of an excellent flavour. It seldom exceeds seven inches in length, but its head is large and disproportionate.

GRUS. The classical name for the crane. See *CRANE*.

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GRUS BALEARICA. See *CRANE, BALEARIC*.

GRYGALLUS. The common classical appellation for the grouse. See *GROUSE*.

GRYLLOTALPA. A name given by authors in general to the mole-cricket. See *CRICKET, MOLE*.

GRYLLUS. An appellation given by some writers to the conger, or sea-eel. Ritterhusius, who has published commentaries on Oppian's *Halieutics*, has called the gongros of that author by this word, but certainly very improperly. Artedi, in order to obviate all occasion of error in future, has not allowed this fish any generic name; but makes it a species of his genus of *muræna*, and distinguishes it from all the others by the name of the *muræna* with the rim of the back-fin black.

GRYLLUS VULGARIS. A name given by Gesner and Bellonius to the ophidion of the generality of authors; and distinguished by Artedi under that of the ophidion with four cirri or beards at the lower jaw. Pliny calls this fish the *pisciculus congro similis*.

GUACAGUACA. The Brazilian appellation for a bird of the *larus* or gull kind; the eggs of which are much valued, though the flesh is reckoned improper for food. The Portuguese call this bird the *gaviota*.

GUACARI. An American fish of a roundish, or, in some varieties, of a pyramidal figure. Its head is flat below, and roundish on the upper part; its mouth, which is small and round, is placed in the under-part of the head, and furnished with a sort of beard resembling short segments of hogs bristles; the back fin is somewhat prickly, as in the perch; the tail is supported by strong nerves, and very forked; the head is covered with a hard shelly crust, and the body with rough triangular scales having a tubercle in the middle; so that the whole fish seems invested with a coat of armour, and has a quadruple arrangement of tubercles on each side. The body is entirely of a saffron colour, somewhat deeper on the belly than on any other part; and is variegated throughout with brown spots, each of the size of a mustard-feed.

Another variety of this fish is wholly brown, spotted with small specks of a fine deep black. Both are esteemed proper for food, and are tolerably well flavoured.

GUACUCUA. A Brazilian appellation for a kind of water-bat.

GUACUIA. A very singular fish caught on the shores of the Brazils; called by some authors the *vespertilio aquaticus*; and, by others, the *monoceros piscis*. The anterior part of the body of this fish is shaped like a plough; the head is about six inches long, and four wide in the broadest part; the hinder part of the body is round and pointed towards the tail; the general figure is broad and flat; and from between the eyes springs a single horn, near two fingers in length, hard and conical. The mouth is pretty wide, but destitute of teeth; the skin is tough, but without scales; and the ventral fins seem to answer the purposes of feet. This animal is brown on the back, red on the belly, and full of tubercles; approaching the most nearly of any other fish to the *manipulator*.

GUALA APARA. The name of a South American crab very beautifully variegated; one end of the body being terminated by a circle, and the other by a right line. It is about three inches broad.

G U A

broad, and two and a half long. The fore-part of the shell is of a dark brown colour variegated with whitish spots; and the hinder part is a whitish yellow, adorned with brown longitudinal streaks. It has eight roundish feet or claws, besides the two great claws or nippers, each of which is two inches and a half long and half an inch broad: the upper parts of these claws are armed and dentated like the comb of a cock; and the nippers somewhat resemble the bill of a bird; which, with the whole claw, represents the fore-part of the head of a cock. This crab, in swimming, blows the water up like the bubbling of a spring.

GUAIBA-COARA. An American fish, called by the Portuguese *Burace de Velha*. The body is flat, but the back is prominent; it's greatest length is eight inches; and it's breadth is equal to a third of it's length. These fish are caught among the rocks and near the shores of the Brazils in great abundance, and are eaten both by the natives of the country and the Portuguese settlers.

GUAIMINIBIQUE. An appellation given by many authors to the humming-bird, called also *guainumbi*.

GUALACLING. The Philippine name for a bird of the starling kind about the size of the dove. It's colour is a plain black, unless when viewed in the sun, and then it reflects a great variety of very beautiful tints. This bird feeds on fruits; and is very brisk and lively in it's disposition.

GUAMAJACU APP. A name given by Marcgrave and others to the *piscis triangularis*.

GUAMAJACU ATINGA. A fish of the orbis kind, usually about six inches in length, having a frog-shaped mouth; and, instead of teeth, furnished with a hard bone above and below. The holes for the gills are very large, near which there are two square, broad, and short fins; the head is covered with a hard bony shell; and the whole body with prickles, except on the belly, which is as soft as that of the frog: these prickles are so many small-pointed bones. This animal can at pleasure inflate it's whole body into the resemblance of a bladder; and it's flesh is esteemed poisonous.

GUAMAJACU GUARA. An appellation given by some authors to that species of the hystrix, or porcupine, called by Marcgrave *diabe*.

GUANA. A species of American lizard.

GUANACO. A variety of the llama, or American camel. See *CAMEL*, *LLAMA*.

GUANTUMI. A name frequently given to the Indian land-crab, with a roundish body, slightly compressed, and of the size of an orange. It has eight legs or claws five inches long, the lower parts of which are covered with long hairs; the mouth is large, and hairy on it's sides, as well as the rest of the body; about the mouth there are two remarkable feelers; and the eyes likewise may be extended or drawn back at pleasure.

GUAPERVA. An American fish of the rana piceatrix kind, but remarkably small, and differing from that singular creature in several essentials. It is seldom more than three inches long, and one and a half broad; it has no gills; it's mouth is large, projected like that of the eel, and furnished with extremely minute teeth; it's eyes are very small; on the middle of it's upper lip grows a small upright horn; and before it's slender tent, half a finger in length, turns backward,

G U A

and clubbed at the extremity. It has one large dorsal fin, and two small ventral fins; and on each side of the body rises a kind of arm, which degenerates into a fin towards the extremity. This fish is entirely covered with a tough skin, rough on the back, and smooth on the belly; and the colour is a reddish brown, marked with large black points.

GUARA. A Brazilian bird, called by *Cladius Numenius Indicus*, or the Indian Curlew. It is about the size of the platea, or spoon-bill; the beak is long, and of a greyish colour; the tail is short, and, when closed, concealed by the wings; and the colour of the whole body is a fine vivid red, except that the long wing-feathers are tipped with black at their extremities. When first hatched from the egg, this bird is black; afterwards it becomes greyish; and, lastly, changes to a beautiful red.

GUARACAPEMA. A term used by some authors to express the fish more usually called the dorado, or *auratus piscis*.

GUARA-TEREBA. An American fish of the cuculus kind, approaching to the nature of the *trachurus Brasiliensis*. It is commonly about five inches long; the head obtuse; and the mouth is furnished with very small teeth. The lateral lines towards the tail are armed with prickly hooks, pointing backwards; and the tail is bifid.

GUARAUNA. An aquatic bird about the size of the snipe, common in the Brazils. The bill is straight, slightly hooked at the end, and about four inches long; the body is about the same length; the colour is a dusky brown, with an admixture of green; and the flesh is much admired for it's delicacy.

GUARERUA. A fish caught in the Brazilian seas. It's body, which is compressed, is about four inches long, and three broad; and it has a small mouth, and very minute teeth. On the upper part of the body, and on the belly, there is a long broad fin, both which terminate in a thorny point; the tail is cuneiform; the scales are black, with yellow edges; all the fins are also black; and about the mouth there is an iron-coloured line, having another placed perpendicularly over it. The body is surrounded with three stripes, two of which run through the broad and hinder part of the fins; and the tail is divided by a third.

GUARIBA; the *Simia Beelzebub* of *Linnaeus*. This animal, which is of the monkey kind, is common in the West Indies. It is of the size of the fox; the face is prominent; the eyes are black, and shining; the ears are small, and round; the tail is very long, naked towards the end, and extremely flexible, the creature frequently twisting it round trees, and suspending itself by it. The body is entirely covered with fine black shining hairs, except on the legs and part of the tail, where they are brown: these hairs are so much disposed over the animal, that it appears perfectly furred, except that it has a kind of beard under the chin and throat.

These animals are prodigiously numerous in the woods of Brazil and Guiana, and make a very loud and hideous noise. It is very common for one of them to begin his note, and the whole assembly to repeat the note around him. According to Marcgrave (who informs us that he has frequently been assured by some of the people of the country) they meet in the trees, where, and when they meet, they are not known. One of them, placing himself on a high branch, and making a loud noise,

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after he has sung in this manner by himself for some time, the rest observing the most perfect silence, he lifts up his hand, and immediately the whole company joins in chorus. This intolerable yell is kept up, without intermission, till the same monkey who gave the signal for their beginning, elevates his hand a second time, when they all become silent in an instant. He then exalts his voice again singly, and so finishes the business of the assembly.

These monkeys carry their offspring on their backs; and bound very nimbly from tree to tree, the young clinging fast to the bodies of their parents. They are very fierce, and totally intractable.

There is also another species considerably larger; which Marcgrave positively assures us, often attack the negro women as they traverse the woods, and even lie with them by force.

GUARUGUARU. A small American fresh-water fish, seldom exceeding one inch and a half in length, and having a very slender body. It is caught in lakes and ponds; and its flesh is esteemed very agreeable.

GUATUCUPA. A Brazilian fish which grows to the length of two feet. Its back is a little elevated; its mouth is small, and beset with sharp teeth; and it has only one long dorsal fin, the rays of which are rigid and prickly. It is caught among rocks; and its flesh is extremely well-flavoured.

GUATUCUSA. An American fish, approaching to the nature of the coracinus of the Mediterranean; by some called corvina. It is of an oblong shape; its back is a little prominent; its belly is perfectly flat and even; and its usual length is from twelve to twenty inches.

GUDGEON; the Gobio, and Gobio Fluvialis, of authors. In the Linnæan system, the Gudgeon is a species of the cyprinus; and, according to the Artedean system, the gobius is made the name of another genus of fishes. This fish, which is generally found in gentle streams, is about five or six inches long; the body is round; the scales are small; the back is brown, or olive-coloured; and the belly is whitish. The irides are tinged with red, the gill-covers with green and silver; and at each corner of the mouth there is a single barb. The tail is forked; and both that and the dorsal fin are spotted with black.

The fish grows to a much larger size in some rivers than in others; and a few, we are informed, have been caught in the Cole, near Uxbridge, each of which weighed a whole pound. Their flesh is highly esteemed, and deemed little inferior to that of eels.

The Gudgeon bites very eagerly from the end of March till Michaelmas, and may be caught with a variety of baits; it may be driven to any part of the river, by stirring up the bed of the river; a prodigious quantity of them are always found beset the bottom.

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GUILLEM. A provincial appellation for the bird called by the generality of authors *Iommia*, and in some places the kiddy and sea-hen.

GUILLEMOT; the *Colymbus Troile* of Linnæus. This bird is about seventeen inches long, and upwards of twenty-seven broad. The bill is three inches long, black, straight, and sharp-pointed; and near the end of the lower mandible there is a small process: the feathers on the upper part of the bill are short, and soft as velvet; and from the eye to the hind-part of the head there is a small division of the plumage. The head, neck, back, wings, and tail, are of a deep mouse-colour; the tips of the lesser quill-feathers are white; the entire under-side of the body is pure white; the sides under the wings are marked with dusky lines; and the legs are dusky.

These birds are found in amazing numbers on the cliffs which encircle several parts of our coast. The Guillemot is a very simple bird; and, though its companions be shot one by one, it will not quit its station. Like the auk, which it strongly resembles, it lays only one egg, sometimes of a pale blue colour, and at others white, spotted, or elegantly streaked with intersecting lines. It continues near the Orkneys during the whole winter.

GUILLEMOT, BLACK; the *Colymbus Grylle* of Linnæus. This species measures fourteen inches in length, the expansion of its wings being twenty-two. The bill is an inch and a half long, straight, slender, and black; on each wing there is a large bed of white; the tips of the lesser quill feathers, and the inner coverts of the wings, are white; but, excepting these, the whole plumage is black. The tail consists of twelve feathers; and the legs and feet are red. In winter, this bird is said to change to white; and a variety, spotted with black and white, is frequently seen in some parts of Scotland.

The Black Guillemot frequents the Bass Islands, in Scotland; the Isle of St. Kilda; the Faro Islands; and, according to Pennant, the rocks of Elandidno, in Caernarvonshire. It continues always at sea, except during the season of incubation, and is very difficult to be shot, diving to the bottom at the least alarm. The Welsh call this bird *Cafz* in Longwr, or the Sailor's Hatred, from a superstitious notion that its appearance prognosticates a storm. It visits St. Kilda in March; builds a subterraneous nest; and lays a single grey egg, sometimes spotted with rust and speckled with ash colour.

GUILLEMOT, GREY. This species is seen on the Welsh coasts in the winter season, though not very frequently: its breeding place is unknown, as it has never been observed on the rocks among congeneric birds. Its weight is nineteen ounces; its length is sixteen inches, and the expansion of its wings twenty-six. The top of the head, the whole upper part of the body, the wings, and the tail, are of a very dark mouse colour; the cheeks, throat, and lower side of the body, are white; from the angle of the eye rises a dusky stroke, pointing to the hind part of the head; the tips of the secondary feathers are white; the tail, which consists of twelve feathers, is very short; and the legs are black.

GUINEA-HEN; the *Meleagris* of some authors, and the *Numida* of Linnæus. This remarkable bird in some measure unites the characteristics of the pheasant and the turkey, having the fine delicate

delicate shape of the one, and the bare head of the other. It is about the size of the common hen, but its legs and neck are much longer; the body is sloped like that of the partridge; the colour is a dark grey, beautifully spotted with small specks of white; a black ring encircles the neck; the head, which is reddish, has on its top a hard horny protuberance of a brownish colour; the space under the eyes is blue; and a red fleshy appendage proceeds from the upper chap, somewhat resembling the wattles of a cock.

This bird is well known all over Europe, particularly among the nations which border on the Mediterranean and the coast of Africa. In different countries it has obtained different names: some call it the Barbary hen; and others, the Tamis bird, and the bird of Numidia. It was probably first imported from Guinea to Britain; and therefore receives its name from the place of its nativity.

These birds, which are naturally gregarious, breed up their young in common, the females tending the brood of others with as much assiduity as their own. They thrive very well in this climate; but it is almost impossible to render them so tame and domestic as the generality of English fowls. The females also are less careful with respect to the business of hatching and rearing their brood than any other birds of the gallinaceous kind; for which reason it has been found expedient to place the eggs of the Guinea-fowl under the common hen, whose maternal attention is invariably exerted to protect whatever is committed to her care. The young Guinea-fowls are very beautiful, appearing like so many partridges; their beaks and legs are red; and their whole plumage is of the colour of that of partridges. Though the eggs of the Guinea-Hen be occasionally removed from the nest, yet if care be taken always to leave one, she will continue to lay till she has deposited a hundred, or a hundred and fifty; which, as well as the flesh, are reckoned salubrious and agreeable food.

This bird is very sprightly, active, and of a restless and turbulent disposition. It runs very swiftly, after the manner of the quail and the partridge; but its wings are short, and ill adapted for flight: however, it does not reside among other domestic fowls, but ascends some house or tree, where it imagines itself beyond the reach of danger. Its cry is sharp and disagreeable; its quarrelsome disposition keeps it in continual warfare, unless it is allowed to rule the yard; and its agility, joined to the sharpness of its beak, generally secure it the victory over every opponent.

The Guinea-Hen, or, as it is frequently called, the Pintada, is so very common in America, that many have supposed it to be a native of the New World; but this is certainly an erroneous conjecture: the origin of these birds is in Guinea, where they are found, in flocks of several hundreds together, perching on trees, and feeding on worms and grasshoppers. They were first imported into America in 1568, with some cargoes of negro slaves. The Spaniards, neither then, nor at any succeeding period, have attempted to render them domestic; but they still continue wild in the savannah, where they have increased so prodigiously, that they may naturally enough appear to be natives.

GUINEA PIG, the *Mus Porcellus* of Linnaeus. This animal, which some naturalists call

the common cavy, is a native of the warmer climates; but has so long been domesticated, and so widely diffused, that it is now become general in every part of the world. Few are unacquainted with the figure of this little animal: in some places it is regarded as a particular favourite; and is often known even to supplant the lap-dog. It is smaller than the rabbit; its legs are considerably shorter, indeed they are scarcely seen except when the creature moves; its neck also is so short, that its head seems affixed to its shoulders; its ears are short, thin, and transparent; its hair is like that of a sucking-pig; and it has not even the least vestige of a tail. In other respects, it bears some resemblance to the rabbit. When it moves, its body lengthens like that animal; and, when at rest, it contracts its form in the same manner. Its nose is furnished with the rabbit-lip, except that its nostrils are much farther apart. Like all other animals which have been reduced to subjection and taken under human protection, its colour varies; in some it is white; in some red; and, in others, speckled. It stroaks its head with its fore-feet like the rabbit; and, like it, sits on its hind-legs; but it differs again from that animal in the number of its toes, having four on the fore-feet, and only three on the hind.

These animals are, of all others, the most helpless and inoffensive, scarcely possessing sufficient courage to defend themselves from the mouse, the meanest of all quadrupeds: their only animosities are exerted against each other; and in such conflicts they will often fight with great obstinacy and perseverance: but against all other aggressors their only remedy is patience, non-resistance, or flight. It is therefore somewhat wonderful how they can protect themselves in a savage state, since they have neither strength, swiftness, nor even the natural instincts of self-preservation, observable in other animals of almost every description. In a domestic state, indeed, they owe their safety solely to the unceasing protection of the human race: they must be constantly attended, guarded from the severity of the brumal cold, and secured from the attacks of other domestic animals, which are apt to insult them on every occasion. Such indeed is their stupidity, that they suffer cats to devour them without resistance; and, different from all other creatures, the female beholds her young destroyed, without once attempting to save them.

The favourite food of Guinea-Pigs is bran, parley, or cabbage-leaves; but there are scarcely any vegetables cultivated in English gardens which they will not readily eat. The carrot-top seems a peculiar dainty; and those who are studious to preserve the health of these animals, should often vary their food; for, when subsisted on a kind either too succulent or too dry, the effects are quickly visible on their constitutions. When fed with recent vegetables, they seldom drink, but it often happens that, inspired by nature, they seek drier food when the former disagrees with them: they then gnaw cloaths, paper, or whatever dry substances they meet with; and, on these occasions, they are observed to drink, which they do by lapping. They are particularly fond of a beverage of new milk; but, in cases of necessity, are satisfied with water.

Their motion is performed like that of a rabbit, though much less swifter; and, when confined in a room, they seldom cross the floor, but generally keep close to the wall. The male commonly

drives the female before him, never moving a-breast together; but the one seems invariably to tread in the footsteps of the other. They shew a predilection for the darkest recesses and most intricate retreats; where, if they are furnished with a bed of hay, they continue to sleep together, and seldom venture out but when they suppose themselves free from annoyance. When they quit their retreat, they spring swiftly forwards, stop at the entrance, listen, look round, and if they perceive the slightest symptom of danger, they run back with precipitation. However, in very cold weather, they appear more active; which is probably occasioned by the uneasy sensations they feel from the severity of the air.

The Guinea-Pig is a very cleanly creature, and totally different from that which affords it a name. If the young ones happen to be soiled in the dirt, or any way discomposed, the female contracts such an aversion to them, that she never permits them to visit her more: indeed, her sole employment, as well as that of the male, seems to consist in smoothing the skin, disposing the hair, and improving it's gloss. The male and female assume this office by turns; and, when they have brushed up each other, they then turn their attention to their young, taking particular care to make their hair lie smooth, and biting them if they appear refractory.

As these creatures are so solicitous about adorning themselves, their habitations should be regularly cleaned, and beds of fresh hay provided for them weekly. Being originally sprung from a warm climate, they are naturally chilly in this: cleanliness, therefore, is favourable to warmth, and helps to expel moisture. With moderate care, they may be reared without the aid of artificial heat; but, in general, it is impossible to keep them from the fire in winter, if they have once been permitted to feel the benefit of it.

Guinea-Pigs repose flat on their bellies, pretty much in their usual posture, except that they love to have their fore-feet highest; and for this purpose they turn themselves several times round before they lie down, in order to fix on the most convenient situations. Like hares, they sleep with their eyes half open, and continue extremely wakeful if suspicious of danger. The male and female never repose at the same time; but, when he rests, she remains on the watch, silently continuing to guard him, with her head turned towards the place where he lies. When she supposes that he has had sufficient refreshment, she then awakes him by a kind of murmuring noise, forces him from his bed, and occupies his place. He then performs the same kind of offices to the female in his turn, and continues vigilant till she has finished her nap.

Extremely salacious in their natures, these animals are capable of propagating their kind at the age of six weeks. The female goes with young about five weeks, and usually brings forth from three to five at a time: but, what is very extraordinary, she admits the male the very day she has brought forth, and becomes pregnant again; so that their increase is really astonishing. She suckles her young about twelve or fifteen days; but, during that time, she seems incapable of distinguishing between her own and the progeny of another. The young are, like all others of the hare kind, produce! with their eyes open; and, in less than half a day, equal their dams in agility. Though the parent is furnished with but two teats,

she abundantly supplies her offspring with milk; and they are almost capable of subsisting on vegetables from their very birth. If the young are permitted to continue long together, the stronger, as in all other societies, will soon begin to usurp dominion over the weaker. Their animosities, which are frequent and obstinate, and their jealousies very apparent, often originate from a desire of the warmest place, or the most agreeable food. If one of them happens to be more fortunate in this respect than it's companion, the strongest generally discovers the advantage, and endeavours to possess it. Their manner of fighting is ridiculous enough to a spectator: one of them seizes the hair on the nape of the other's neck with it's fore-teeth, and attempts to tear it away; the other, by way of retaliation, turns it's posteriors to it's enemy, kicks up behind like a horse, and with it's hinder claws scratches the sides of it's antagonist; so that they are sometimes mutually covered with blood.

But, though sufficiently formidable to each other, with regard to the rest of animated nature, these creatures, as already observed, are the most timorous on earth; a falling leaf disturbs them, and the most ignoble and feeble adversary overcomes them: hence they are tamed with difficulty; and will suffer none to approach them except the person by whom they are fed. They grunt somewhat like young pigs; and their notes expressive of pain, are very piercing.

Some people eat the flesh of these animals; but it by no means sufficiently compensates for the trouble of rearing them.

GUINIAD, or GWINIAD; the *Salmo Lavaretus* of Linnæus. A fish of the truttaceous kind, generally known among authors by the name of *ferra*, and commonly caught in the lakes of Wales, England, and Scotland. It is also found in Switzerland, Italy, Norway, Sweden, Lapland, and Ireland.

The Scotch have a tradition, that this fish was first introduced into their country by the beautiful but unfortunate Queen Mary. Sibbald calls it *Vandefius*, from the French *Vendoise*, a Dace; to which an incurious observer might be tempted to compare it from the whiteness of it's scales. It's British name *Gwiniad*, or *Whiting*, was given it on account of the whiteness of it's body.

The Guiniad has sometimes been found to weigh three or four pounds; it's length is from eleven to fifteen inches; and it's greatest depth from three to four. The head is small, smooth, and dusky; the eyes are large; the pupil is of a deep blue colour; the nose is obtuse; the jaws are of equal lengths; and the mouth is small, and destitute of teeth. The covers of the gills are silvery, sprinkled with black; and the branchiostegous rays are nine in number. The back is slightly arched and carinated; the colour, as far as the lateral lines, is glossed with deep blue and purple, but near these assumes a silvery cast tinged with gold; and, beneath them, those colours entirely prevail. The lateral line is straight, and composed of a series of distinct spots of a dusky hue; the belly is a little prominent; the first dorsal fin, which is placed almost in the middle, consists of fourteen branched rays; and the second, which is thin and transparent, is situated near the tail. The pectoral fins contain eighteen rays, the ventral twelve; and the anal fifteen, all branched at their extremities. The ventral fins, in some, are

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of a fine azure blue colour; in others, sprinkled with blue: the tail is extremely bifid; and the scales, which are large, adhere close to the body.

The flesh of the Guiniad has an insipid taste. It dies almost immediately after being taken out of the water; and, if not salted, soon becomes putrid.

These fish, which are gregarious, approach the shores in vast shoals in spring and summer, proving a great relief to the necessities of the poor. In the Welsh lakes, the Guiniad spawns about the month of December. Camden observes, that this fish never enters the Dee, nor the salmon ever ventures into the lake; but though this is generally the case, the first has been known to stray some miles down the river, and the salmon has been caught trespassing in the lake.

GUIRA-ACANGATARA. A Brazilian bird described by Marcgrave, of the wood-pecker kind, about the size of the great spotted wood-pecker of Europe. It is common in the woods of different parts of America, and makes a loud and disagreeable noise.

GUIRA-CENOIA. A small Brazilian bird of the parus or titmouse kind. Its head, throat, breast, belly, and the lower part of its beak, are of a fine blue colour; its neck, and the upper half of its back, are black; its wings are variegated with black and blue; its tail is black; and its legs are brown.

GUIRA-COEREBA. A Brazilian bird, described by Marcgrave, of the size of the greenfinch. The top of the head is ornamented with a large spot of sea-green feathers; the rest of the head, the throat, the breast, the belly, and the lower half of the back, are of a fine shining blue colour, variegated with white; a fine blue line crosses the wings; the upper half of the back is a very deep black, glossy and shining; and the tail is black.

GUIRA-GUAINUMBI. The name of a bird of the king-fisher or merops kind; which, from the quantity of its feathers, appears of the size of the pigeon, though in reality it is no larger than the thrush. The bill, which is longish and black, is a little crooked, and serrated at the edges; the legs are very short; the tail is long and narrow; and the colours of the whole body are various and beautiful.

GUIRA-NIHFMGATU. A Brazilian appellation for a bird of the sparrow kind, common in that country.

GUIRA-PANGA. A bird of the thrush kind, common in the Brazils, remarkable for the loudness and shrillness of its voice. It is the largest of all the thrush kind hitherto described, being about the size of a small pigeon.

GUIRA-PERA. A Brazilian bird described by Marcgrave. It is equal to the lark in size; its beak is short, thick, and black; its head, neck, back, and belly, are of a pale yellow colour; the lower part of the head, the throat, and the breast, are black; and the wings and tail are black and brown, slightly varied with sea-green.

GUIRA-GUACUBERABA. This bird, which is about the size of the goldfinch, is a native of the Brazils. The breast and the extremity of the back are of a fine orange-colour, mixed with yellow; the crown of the head, the outside of the neck, and the anterior half of the back, are a pale green; of which colour also are the wings and tail, except that there are some brown feathers in the

G U L

former; and the belly and rump are yellow. Under the throat a large black spot extends almost to the eyes, above which is a line of bright yellow; the beak is straight, slender, and pointed; and the feet are brown.

GUIRA-QUEREA. The name of a Brazilian bird of the caprimulgus or goat-sucker kind, approaching to the figure of the cuckow. Ray describes it as being about the size of the lark, with long wings, a long tail, short legs, and the toes connected with a membrane, but not webbed. Whether it is a nocturnal bird, or otherwise, we have not learnt; though it is probably of the nature of the caprimulgus, whose figure it nearly resembles.

GUIRA-RANHAENGETA. An appellation given by the native Brazilians to a bird of the ænanthe or wheat-ear kind.

GUIRA-TANGIMA. This bird, which is a native of America, is very remarkable for suspending its nest from the extremities of boughs, from whence it receives its name. It is about the size of the magpie: the head is small, and black; the beak is straight, sharp, and dusky; the lower part of the neck is of the same colour with the head; but the upper part at the beginning of the back is of a sky colour. The tail and wings are also entirely black; but in the middle of the latter there is a large white spot; and the rest of the body is a sky blue.

The Guira-Tangima constructs a cylindrical nest, composed of twigs, in a very artful manner: it probably suspends it from the branches of trees in order to avoid the depredations of serpents, and some quadrupeds which are fond of ovarious food.

GUIRA-TINGA. A Brazilian bird of the heron kind, but considerably smaller than the common European bird of that name. It walks very erect; its neck is long; its feet and legs are greenish; and its body is entirely covered with snow-white plumage, which on the neck is more beautiful and soft than the down of the ostrich. Marcgrave informs us, that it is always seen above water.

GUIRA-TIRICA. Ray calls this bird *Rubicilla Americana*. It is a native of the Brazils, and appears to be of the bullfinch kind. It grows to the size of the lark; and is furnished with a very strong bill.

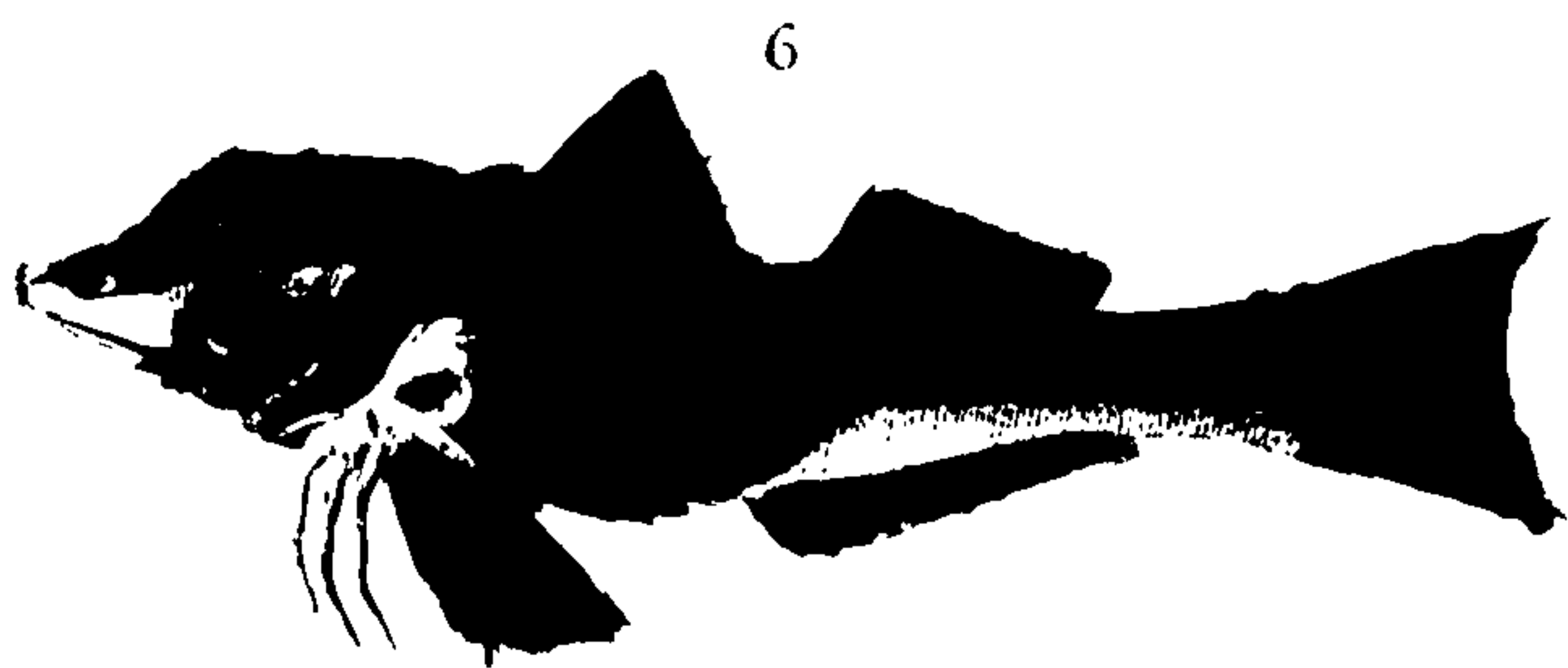
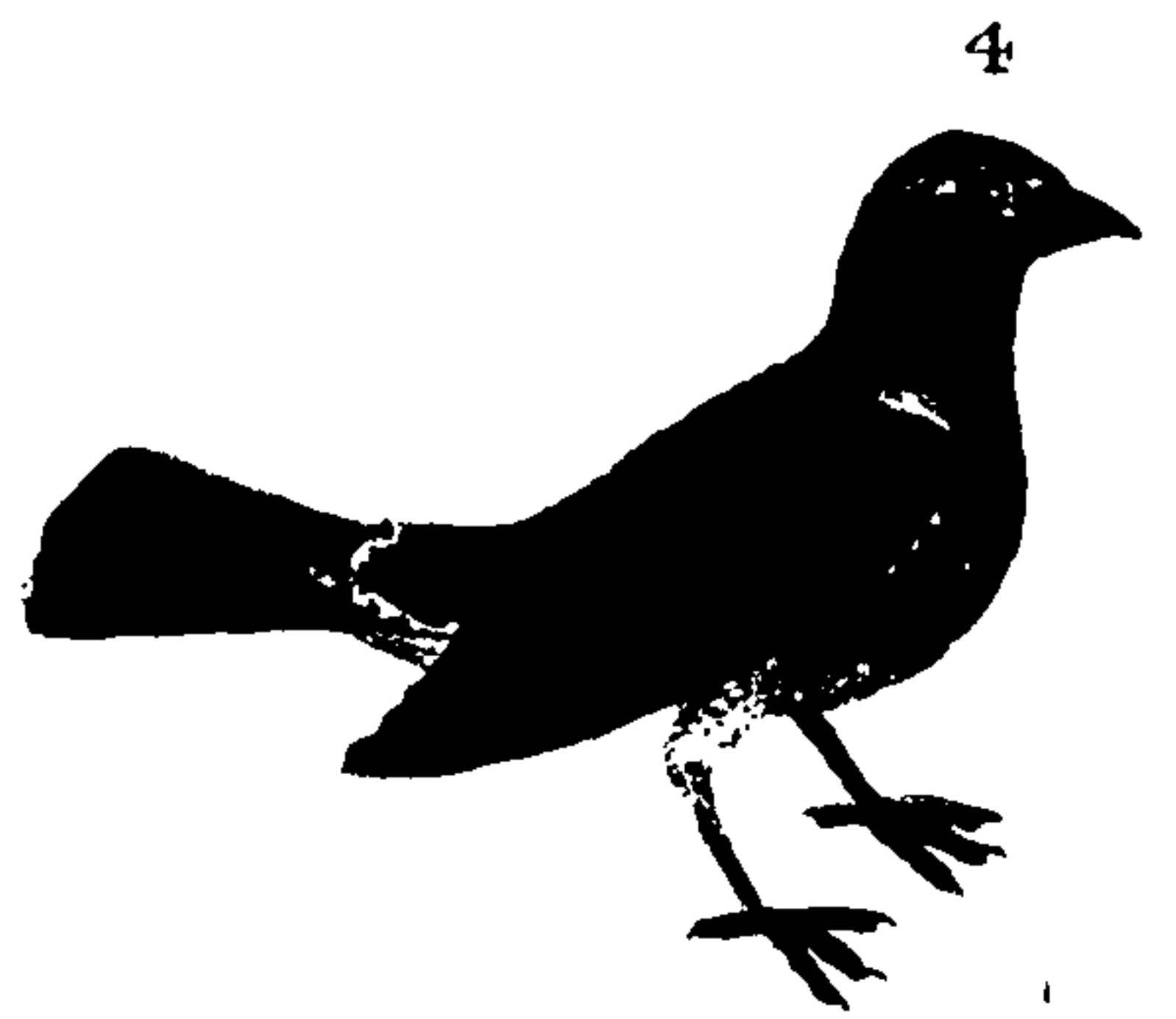
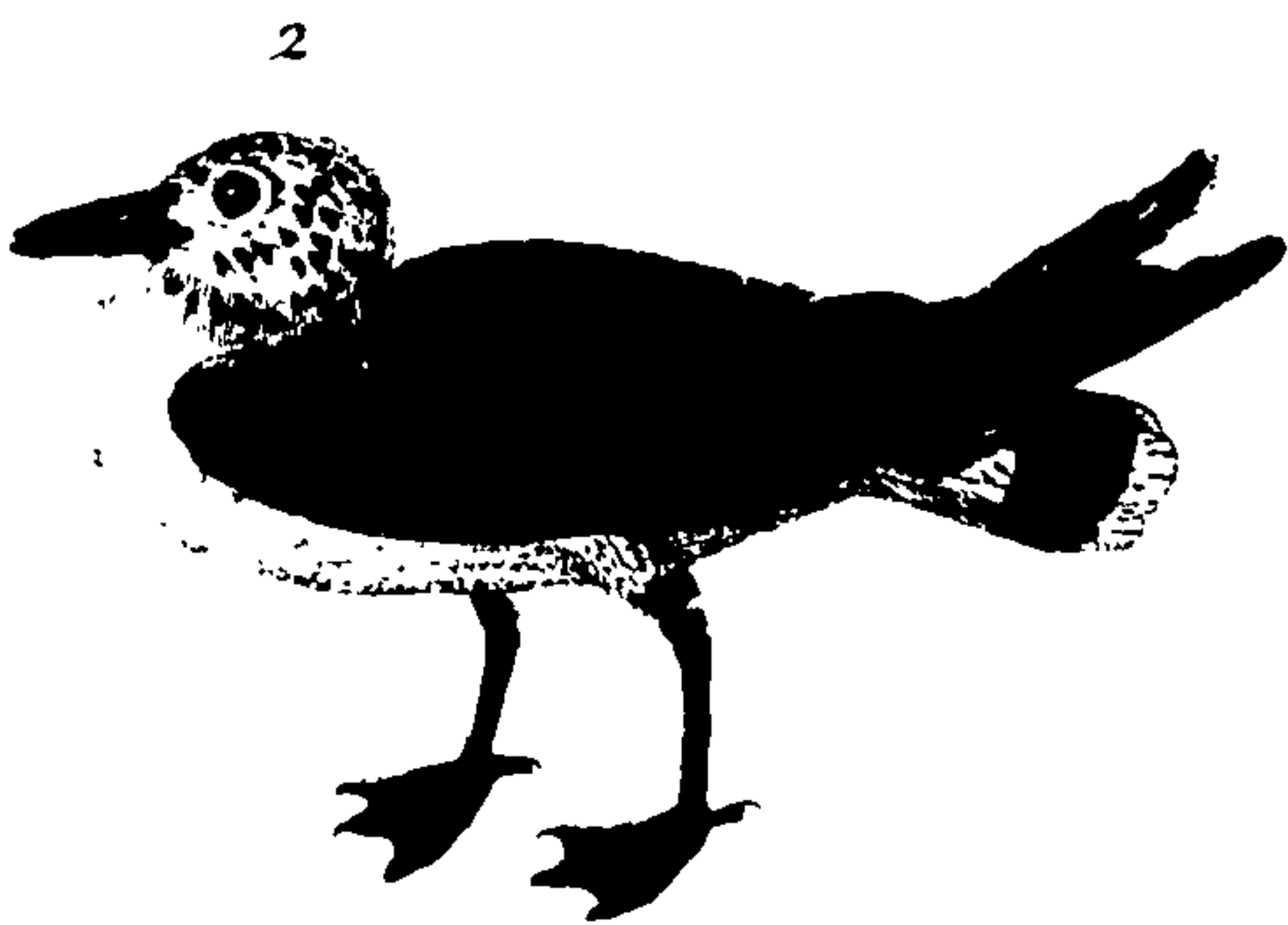
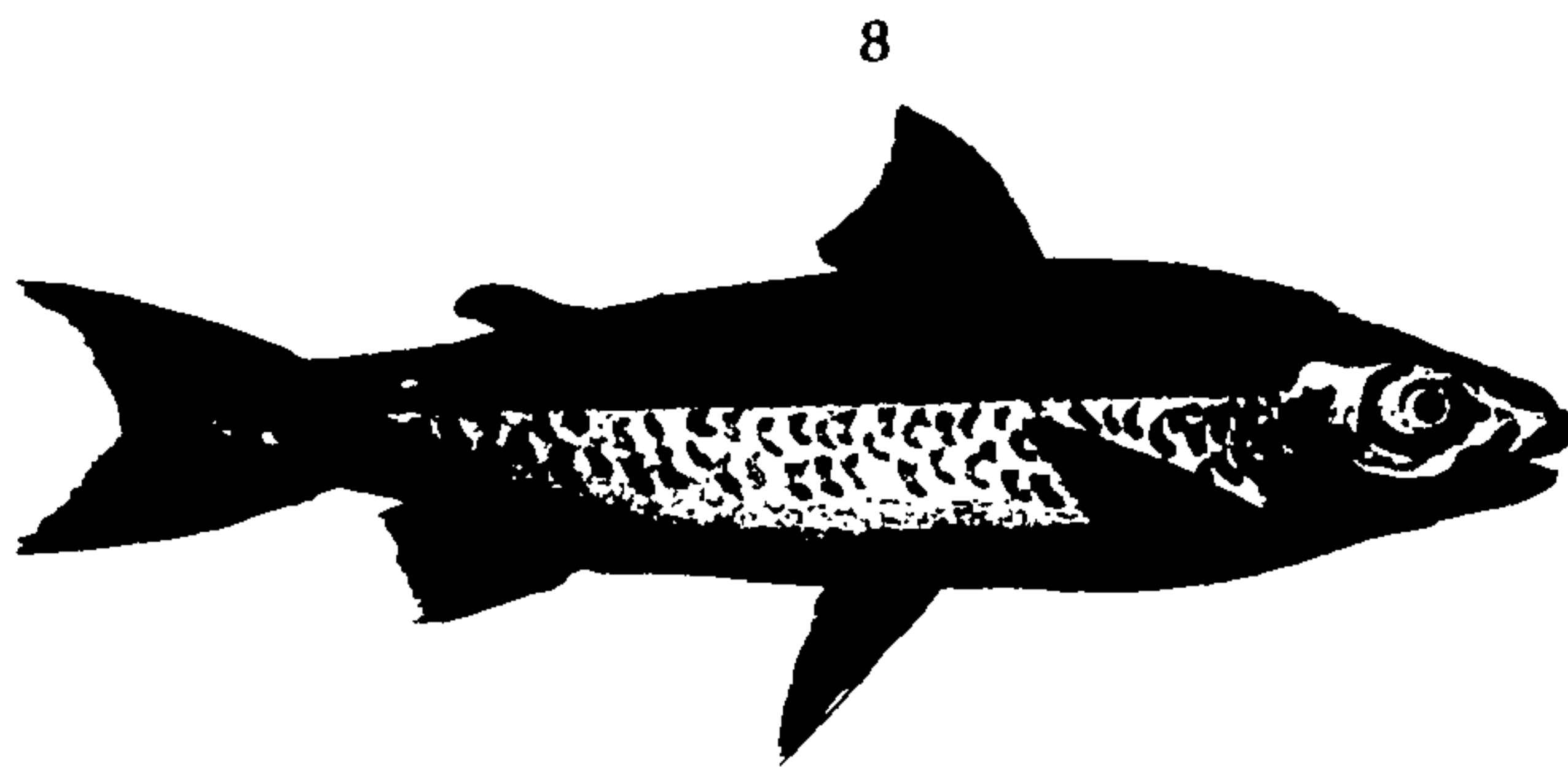
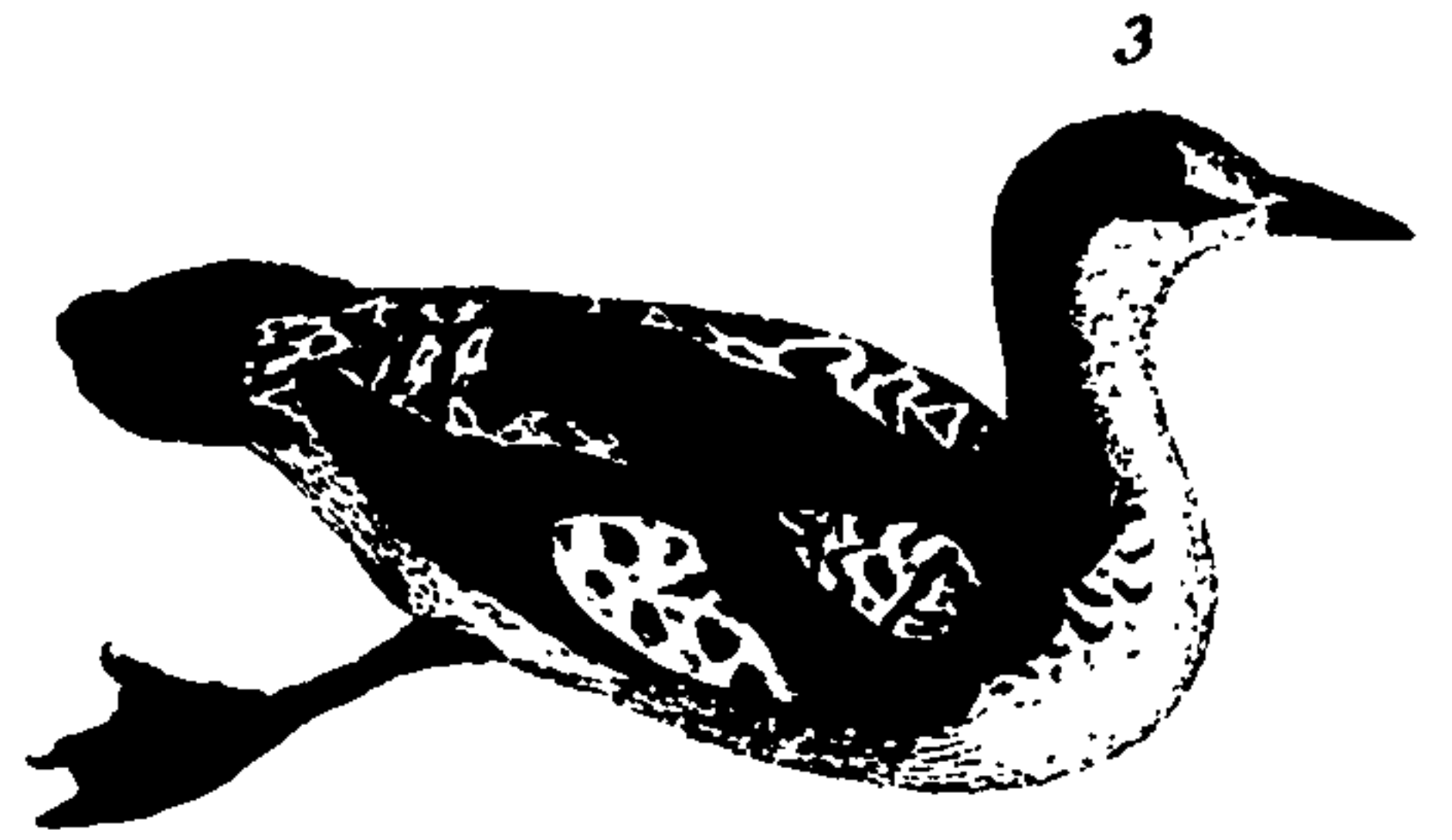
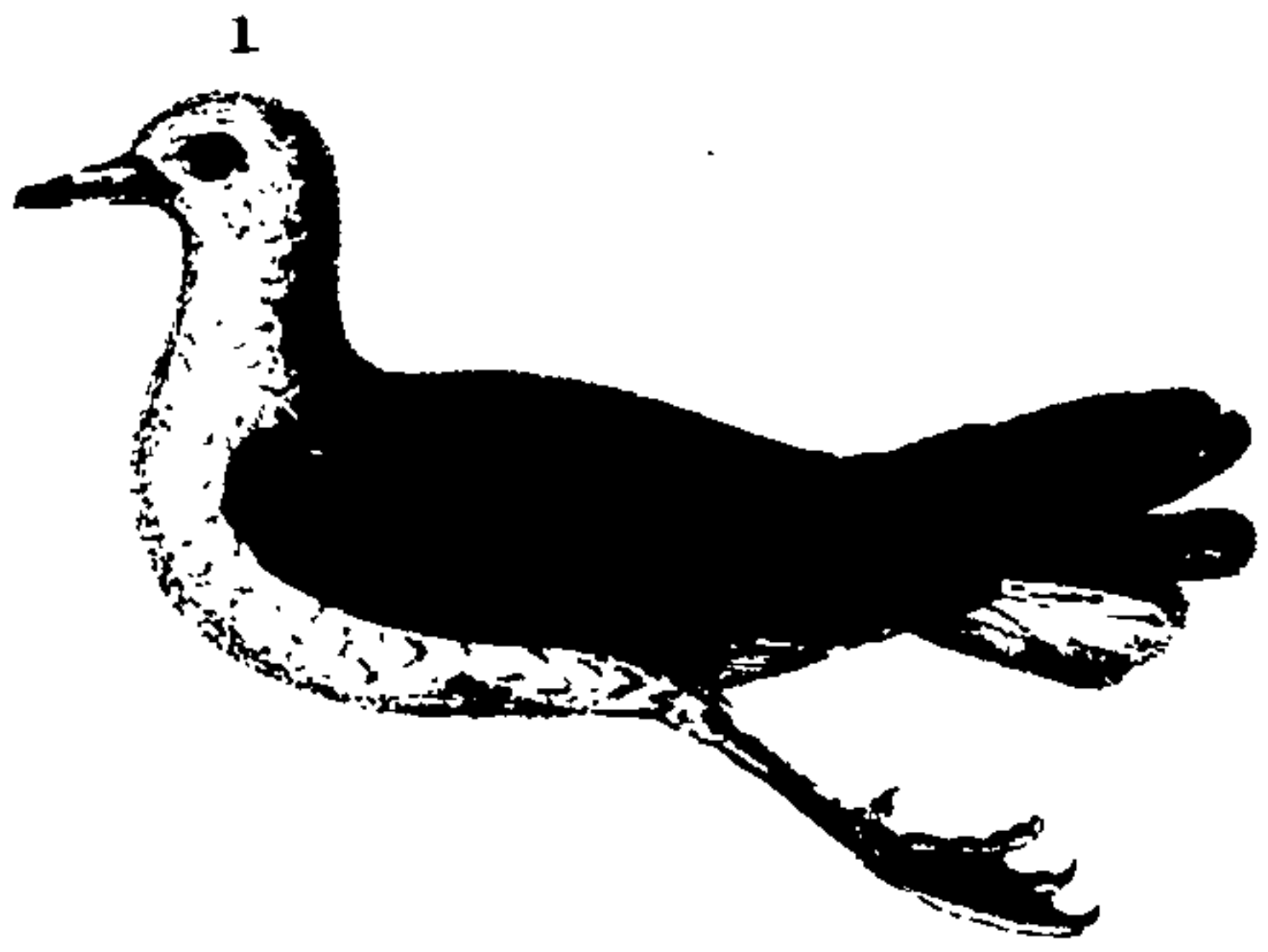
GUIRA-UPIAGARA. An American species of serpent, so called from its fondness for eggs; its name, in the language of the natives, implying a devourer of eggs. It is of a long, slender figure; and is black on the back, and yellow on the belly. It ascends trees with great facility; and writhes itself among the highest branches, in quest of birds nests, with amazing dexterity.

QUITGUIT. An appellation under which Nieremberg has described a bird which, he informs us, is about the size of the wren; and, notwithstanding its smallness, is much esteemed for the table. It is entirely of a vivid green colour, and remarkably lively and active.

GULASISI. The Philippine name for a very small and beautiful species of parrot, common in that country.

GULL. In an extensive sense, the Gull is the common name of all the *larus* kind; but is generally limited to a few particular species, of which the subsequent are the most common.

GULL.



1. COMMON GULL. 2. WINTER GULL. 3. SPOTTED GULLENOT. 4. GUIN - BUSCUBERABA.
5. GREY GULLARD. 6. SAFFRINE GULLARD. 7. STREAKED GULLARD. 8. GULLIAD.

GULL

GULL, COMMON; the *Larus Canus* of Linnæus. This bird, which is the most numerous of the genus, breeds on the ledges of cliffs that impend the sea; and, during the winter season, frequents almost every part of the British coasts where the high, bold shores, present a favourable situation. Like other rapacious birds, it lays but few eggs; which circumstance, added to the numbers continually destroyed for subsistence, has in many places diminished the breed. It generally measures about seventeen inches in length, and thirty-six in breadth: the bill is yellow; the head, neck, tail, and the whole under-side of the body, are pure white; the back, and the coverts of the wings, are grey; and the legs are a dull white tinged with green.

GULL, BLACK-BACKED; the *Larus Marinus* of Linnæus. This species is about twenty-nine inches long, and the expansion of the wings almost five feet nine inches. The bill, which is very strong and thick, is of a pale yellow colour; the irides are yellow; the head, the neck, the whole under-side, the tail, and the lower part of the back, are white; the upper part of the back and wings are black; the quill-feathers are tipped with white; and the legs are of a pale flesh-colour.

The Black-Backed Gull inhabits various parts of the British coasts, and breeds in the highest cliffs. It principally subsists on fish; but, for want of more agreeable food, it will devour carrion.

GULL, BROWN AND FERRUGINOUS; the *Larus Cataractes* of Linnæus. This bird inhabits Norway, the Ferro Islands, Shetland, and the South Sea. It is the most formidable of all the Gull kind, preying not only on fishes, but also on all the lesser kinds of water-fowl; and, according to some authors, on domestic poultry and lambs. It possesses all the native fierceness of the eagle in defence of its young; and, when the inhabitants of the Ferro Isles visit its nest, we are told that it attacks them with the utmost intrepidity; and will rush on a knife, or any other instrument which is held up for their defence.

In the craggy isle of Foula, a little west of Shetland, this bird is religiously preserved, because it defends the flocks of the natives from eagles, which it pursues with so much animosity, that even these very rapacious birds seldom venture near its abode; and on this account the inhabitants impose a fine on any person who destroys one of these Gulls.

This singular species, which Pennant calls the Skua Gull, is about two feet long, and four and a half broad: the bill is upwards of two inches in length, hooked at the end, and extremely sharp; the upper mandible is covered more than half its extent with a black cere; and the nostrils, which are placed near the bend, are pervious. The plumage on the head, neck, back, scapulars, and coverts of the wings, is a deep brown, marked with rust-colour; the shafts of the primaries are white; their ends are principally brown, the lower parts on both sides being white; and the secondaries are marked in like manner, forming a great bar of white. The breast, belly, and vent, are ferruginous, tinged with ash-colour; the tail, when spread, is circular, and of a deep brown colour, except the shafts of the feathers, which are white; the legs are covered with great black scales; and the talons are strong, crooked, and black.

GULL, BLACK-TOED; the *Cephus* of Aldrovandus. The Black-Toed Gull is a rare species in this country. A bird of this kind was formerly

GULL

shot near Oxford, and communicated to the Royal Society. It is about fifteen inches long, and thirty-nine broad: the bill is an inch and a half in length; the upper mandible is covered with a brown cere for a considerable way; and the extremity is brown and hooked. The head and neck are of a dirty white colour; the hind part of the latter being plain, and the rest marked with oblong dusky spots. The breast and belly are white, intersected with numerous dusky and yellowish lines; the plumage on the sides and vent is barred transversely with black and white; the back, scapulars, and coverts of the wings and tail, are black, beautifully edged with white; the shafts and tips of the quill-feathers are white; the tail is composed of twelve black feathers tipped with white, the two middlemost being nearly an inch longer than the rest; the legs are of a blueish lead-colour; and the lower part of the toes and webs are black.

GULL, ARCTIC; the *Larus Parasiticus* of Linnæus. The length of this species is about twenty-one inches; and the bill, which is about an inch and a half long, is dusky, and pretty much hooked at the end. In the male, the crown of the head is black; the back, wings, and tail, are dusky; the hind-part of the neck, and the whole under-side of the body, are white: the tail consists of twelve feathers, the two middlemost of which are considerably the longest; and the legs are small, scaly, and black. The female is entirely brown; and the centre feathers of the tail are about two inches shorter than in the male.

Linnaeus, notwithstanding his usual accuracy, has separated this bird from its mate, and made it a synonym to his *larus cataractes*, a bird very different from this species.

The Arctic Gull is very common in the Hebrides; and is also seen in the Orkneys, and on the coast of Yorkshire. All naturalists who mention this fowl, agree that it instinctively pursues the lesser Gulls with such unceasing perseverance, that they emit their excrements through fear, which it catches up, and devours before they reach the water.

GULL, HERRING; the *Larus Fuscus* of Linnæus. The length of this species is twenty-three inches, and the breadth fifty-two; the bill is yellow; the irides are straw-coloured; and the edges of the eye-lids are red. The head, neck, and tail, are white; the back, and the coverts of the wings, are cinereous; and the legs are of a pale flesh-colour.

The Herring Gull forms a large nest, of withered grass, on the cliffs which overhang the sea; and in it lays three eggs of a dirty white colour spotted with black. The young, which are ash-coloured spotted with brown, do not assume their proper colours till they are one year old: a circumstance indeed common to other gulls; and which, not being properly attended to, has occasioned considerable confusion among naturalists.

This Gull is very destructive to fish, particularly to that species from which it receives its name.

GULL, GREAT, GREY, OR WAGEL; the *Larus Naevius* of Linnæus. There are several varieties of this species, differing chiefly in size; some weighing upwards of three pounds, and others not much above two. The bill is black; the irides are dusky; the whole plumage of the head and body, above and below, is a mixture of white, ash-colour, and brown; the quill-feathers are black;

black; the lower part of the tail is mottled with black and white; towards the extremity there is a dark brown bar; and the tips of the tail-feathers, and the feet, are whitish.

Some authors have considered this as the young of the Herring Gull: but it should be observed, that the original colours of the irides are permanent; and these are so very different in the two species now described, that we may safely pronounce them distinct.

GULL, WINTER; the *Larus Tridactylus* of Linnæus. This species, called also the Winter-mew, or Cuddy-moddy, during the brumal season frequents the marshy grounds in the interior parts of this island. The gelatinous substance, known by the name of star-shot, or star-gelly, originates from this bird, or some other of the kind; being only the half-digested remains of earth-worms, on which these birds feed, discharged from their stomachs.

The Winter Gull is about eighteen inches long, and thirty-nine broad; the bill, which is two inches long, is black at the tip, and whitish towards the base; the irides are hazel-coloured; the crown of the head, the hind-part, and the sides of the neck, are white marked with oblong dusky spots; the forehead, the throat, the middle of the breast, the belly, and the rump, are white; the back and scapulars are a pale grey, the latter being spotted with brown; the coverts of the wings are a pale brown, edged with white; the quill-feathers are tipped with white; the tail is white, intersected near the end with a black bar; and the legs are a dirty blueish white.

GULL, BLACK-HEADED; the *Larus Ridibundus* of Linnæus. This species may easily be distinguished from all others by its note, which resembles a hoarse-laugh. It measures fifteen inches in length, and thirty-seven in breadth: the bill is red; the irides are hazel-coloured; and, both above and below the eyes, there is a spot of white feathers. The head and throat are black, or dusky; the neck, the under-side of the body, and the tail, are a pure white; the back and wings are cinereous; and the legs are of a sanguine hue.

These Gulls breed in various parts of England, at a distance from the sea: they form their nests on the ground, of rushes or withered grass; and lay three eggs of a dirty olive-colour, marked with black. They are birds of passage; and, after the season of incubation, disperse to the sea-coasts.

Dr. Plot, in his *Natural History of Staffordshire*, gives a marvellous account of their attachment to the lord of the soil where they breed; gravely telling us, that they shift their quarters, for a certain time, after his demise.

The young of these birds were formerly in high estimation; and numbers were annually fattened for the table. Whitelock, in his *Annals*, mentions a piece of ground near Portsmouth, which produced to the owner forty pounds a year by the sale of pewits; by which name he intends this species of Gull.

GULYAVAN. A Philippine appellation for a very beautiful bird common in those islands. It is of the size of the turtle-dove, and charmingly variegated with black and gold coloured feathers. It is said to feed on fruits; but, with regard to its other qualities, we are left wholly in the dark.

GUNNELIUS. A name sometimes applied to the butter-fish.

GURGULIO. An appellation given by the

ancients to a peculiar class of scarabæi, or beetles; the characters of which are, that they have long heads, forming trunks after the manner of common flies; and in these the horns or antennæ are lodged. Lister divides these into two kinds; the first having only one joint in the promuscis or snout, placed near the middle; the other having several joints, situated near the extremity. There are two species of the former kind, and five of the latter.

GURNARD. A marine fish, of which there are several species. The distinguishing characters are these: the nose slopes; the head is covered with strong bony plates; there are seven branchiostegous rays; and three slender appendages at the base of the pectoral fins. The Latins give this fish the name of the cuculus, from its supposed imitation of the voice of the cuckow; and the English call it the Gurnard, probably from its grunting noise.

GURNARD, GREY; the *Trigla Gurnardus* of Linnæus. This species, which is the most common of the kind, is frequently caught in the British seas; and its flesh is esteemed extremely desirable. Its figure is long and slender: the back is of a dusky green colour marked with black, yellow, and white spots; the lateral lines are dotted and rough; and, under these, the sides are of a pale hue variegated with numerous white spots. The belly is white; the nose is pretty long, and sloping; the end is bifurcated; and each side is armed with three short spines. The eyes are large, above each of which there are two short spines; the teeth, which are small, are arranged in the upper and lower jaws, in the roof of the mouth, and on the base of the tongue. Near the extremity of the gill-covers, there is a strong, sharp, long spine; and exactly above the pectoral fins there is another. The first dorsal fin consists of eight spiny rays, and the second of nineteen soft rays; the pectoral fins are transparent, and supported by ten rays, bifurcated from the middle; the ventral fins contain six rays, and the anal nineteen; the tail is bifurcated; and the lateral line is very prominent, and strongly serrated.

This fish bites very eagerly at a red rag, and is usually taken with the hook in deep water; but is sometimes found near the surface. It frequently measures two feet and a half in length.

GURNARD, RED; the *Trigla Cuculus* of Linnæus. Artedi calls this the wholly red trigla, with the snout lightly divided into two horns, and the opercula of the gills striated.

The Red Gurnard, called also the rocket, agrees with the tub-fish in its general appearance, but differs from it in several essentials. The covers of the gills are radiated; the spines are long and slender; and the nose is armed on each side with two sharp spines. The fins, and the body, are of a full red colour; the scales are large; the pectoral fins are edged with purple; the lateral line is strongly serrated; and the tail is almost even at the end.

GURNARD, SAPPHIRINE; the *Trigla Hirundo* of Linnæus. This species is frequently caught on the Cornish coasts, and some other parts of this island. It is distinguished from the other Gurnards by the breadth and colour of the pectoral fins, which are very broad and long, and of a pale green hue, most beautifully spotted and edged with a rich deep blue. The dorsal fins are lodged between two rays of spines of a serrated form; the back is of a greenish cast; the lateral line is rough; the

the sides are tinged with red; the belly is white; the pupils of the eyes are green, and on the inner corner of each there are two small spines.

GURNARD, STREAKED; the *Cuculus Lineatus* of Ray. The head of this species is large, and distinguished by stellated marks; the eyes are large; the coverings of the gills are thorny; and the mouth is small, and destitute of teeth. The pectoral fins are large and spotted, and beneath them there are three filaments; the colour of the body is red; and the belly is white, marked with a number of streaks pointing downwards from the back. This fish is caught on the Cornish coasts; and is supposed by some to be the *mullus imberbis* of Linnaeus.

GURNARD, YELLOW. See *DRACUNCULUS*.

GURNARD, KING OF. The King of the Gurnards probably receives its name from its size. It is destitute of barbs; the scales are large; the body is wholly red; the eyes are full and prominent; and the jaws are extremely rough. This species is caught on the coasts of the Isle of Malta.

GUROUNDI. A small Brazilian bird, more commonly called the teitei; which is caged, and much esteemed for its singing.

GYMNARTHRIA. A class of insects, having soft naked bodies furnished with limbs. These have generally been called Zoophytes, a term expressing creatures partly animal, and partly vegetable: but it is now clearly proved, that there are no animals which fall under this description; consequently, the term Zoophyte should no longer be retained.

Under the class of Gymnarthria are comprehended the limax, the lerneæ, medusa, aphrodita, amphitrite, &c.

GYMNA. A new-established class of animalcules, comprehending such as have neither tails nor any visible limbs.

GYMNOTUS. A genus of fishes of the malacopterygious kind, in the Artedian system; but, in the Linnæan, of the order of apodes. The characters are these: the branchiostegæ membrane contains five bones; the head is furnished with lateral covers; the upper lip has two tentacula; the eyes are covered with a skin. the body is flattened and carinated under the lower fin; and there is no dorsal fin. Linnaeus enumerates five species of this genus.

GYMNOTUS FLECTRICUS; the Electrical Eel. This very remarkable fish has lately been the subject of much investigation. Bancroft, in his Natural History of Guiana, has given a general description of its figure and effects, but Dr. Garden, in the Philosophical Transactions, has favoured the world with so very accurate and minute an account of this singular creature, that we are induced to lay it before our readers in his own words. The doctor's letter to a member of the Royal Society, which is dated at Charles Town in South Carolina, August 14, 1774, runs thus:

A few days since I went to see some very curious fish, which were brought here about nine or ten weeks ago from Surinam; and I was both surprized and delighted to observe their strange shape, and experience their wonderful properties. I had before received some vague account of such a fish; but I always thought, that much of what I always heard was fabulous. There are five of these fishes now here, of different sizes, from two feet in length to three feet eight inches. The following description was made out from the longest and largest.

It might have been much more accurate, if there had been a possibility of handling the fish, and examining it leisurely; or if I could have had a dead specimen, as many things relating to the internal and external structure could in that case have been more exactly ascertained. But this fish hath the amazing power of giving so sudden and so violent a shock to any person that touches it, that there is, I think, an absolute impossibility of ever examining, accurately, a living specimen; and the person who owns them, rates them at too high a price (not less than fifty guineas for the smallest) for me to get a dead specimen, unless one should die by accident: if that should happen, you may depend on having a more exact and accurate account for the Society.

George Baker, mariner, who brought them here, intends to carry them to England; but as it is very uncertain whether they will arrive in health, and all alive, I have recommended to him to get a small cask of rum, with a large bung, into which he may put any of them that may die, and to prepare them for the inspection and examination of the curious when he arrives.

The largest of these fish was three feet eight inches in length, when extending itself most, and might have been from ten to fourteen inches in circumference about the thickest part of the body. The head is large, broad, flat, smooth, and impressed here and there with holes, as if perforated with a blunt needle, especially towards the sides, where they are more regularly ranged in a line on each side. The rostrum is obtuse and rounded. The upper and lower jaws are of an equal length, and the gape is large. The nostrils are two on each side; the first large, tubular, and elevated above the surface; and the others small, and level with the skin, placed immediately behind the verge of the rostrum, at the distance of an inch asunder. The eyes are small, flattish, and of a blueish colour, placed about three-quarters of an inch behind the nostrils, and towards the sides of the head. The whole head seems to be well supported; but whether with bones or cartilages, I could not learn. The body is large, thick, and roundish, for a considerable distance from the head, and then gradually grows smaller, but at the same time deeper, or becomes of an acinaciform shape to the point of the tail, which is rather blunt. There are many light-coloured spots on the back and sides of the belly, placed at considerable distances in irregular lines, but more numerous and distinct towards the tail. When the fish was swimming, it measured sixteen inches in depth near the middle, from the upper part of the back to the lower edge of the fin, and it could not be more than two inches broad on the back at that place. The whole body, from about four inches below the head, seems to be clearly distinguished into four different longitudinal parts or divisions. The upper part, or back, is roundish, of a dark colour, and separated from the other parts on each side by the lateral lines, which, taking their rise at the base of the head, just above the pectoral fins, run down the sides, gradually converging as the fish grows smaller, to the tail, and makes so visible a depression or furrow in their course, as to distinguish the from the second part or division, which may be properly called the body, or at least appears to be the strong muscular part of the fish. This second division is of a lighter and more clear blueish colour than the upper or back part, and seems to

GYM

swell out somewhat on each side, from the depression of the lateral lines; but towards the lower or under-part, is again contracted, or sharpened into the third part, or carina. This carina, or keel, is very distinguishable from the other two divisions by its thinness, its apparent laxness, and by the reticulated skin of a more grey and light colour, with which it is covered. When the animal swims gently in pretty deep water, the rhomboidal reticulations of the skin of this carina are very discernible; but when the water is shallow, or the depth of the carina is contracted, these reticulations appear like many irregular longitudinal plicæ. The carina begins about six or seven inches below the base of the head, and gradually widening or deepening as it goes along, reaches down to the tail, where it is thinnest. It seems to be of a strong muscular nature. Where it first takes its rise from the body of the fish, it seems to be about one inch, or one inch and an half thick, and is gradually sharpened to a thin edge, where the fourth and last part is situated, viz. a long, deep, soft, wavy fin, which takes its rise about three or four inches at most below the head, and runs down along the sharp edge of the carina, to the extremity of the tail. Where it first rises it is not deep, but gradually deepens or widens as it approaches the tail. It is of a very pliable, soft consistence, and seems rather longer than the body. The situation of the anus in this fish is very singular, being placed underneath, and being about an inch more forward than the pectoral fins, and consequently considerably nearer the rostrum. It is a pretty long rima in appearance; but the aperture must be very small, as the formed excrements are only about the size of the quill of a common dung-hill fowl. There are two pectoral (if I may call them so) fins, placed one on each side, just behind the head, over the foramina spiratoria, which are small, and generally covered with a lax skin, situated in the axillæ of these fins. These fins are small for the size of the fish, being scarcely an inch in length, of a very thin, delicate consistence, and orbicular shape. They seem to be chiefly useful in supporting and raising the head of the fish when he wants to breathe, which he does every four or five minutes, by raising his mouth out of the water: this shews that he has lungs, and is amphibious, and foramina spiratoria seem to indicate his having bronchiæ likewise; but this I only offer as a conjecture, not being certain of the fact. I must now mention the appearance of a number of small cross bands, annular divisions, or rather rugæ of the skin of the body. They reach across the body down to the base of the carina on each side; but those that cross the back seem to terminate at the lateral lines, where new rings take their rise, not exactly in the same line, and run down the carina. This gives the fish somewhat of a worm-like appearance; and indeed it seems to have some of the properties of this tribe, for it has a power of lengthening or shortening its body to a certain degree, for its own convenience, or agreeable to its own inclination. I have seen this specimen, which I have measured three feet eight inches, shorten himself to three feet two inches; but besides this power of lengthening or shortening his body, he can swim forwards or backwards with apparently equal ease to himself; which is another property of the vermicular tribe. When he swims forwards, the undulation, or wavy motion of the fin and carina, begin from the upper part, and

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move downwards; but when he swims backwards, and the tail goes foremost, and the undulations of the fin begin at the extremity of the tail or fin, and proceed in succession from that backwards to the upper part of the body; in either case he swims equally swift. Every now and then the fish lays himself on one side, as it were, to rest himself, and then the four several divisions of his body above-mentioned are very distinctly seen, viz. the vermiform appearance of the two upper divisions; the retiform appearance of the carina; and the last, or dark-coloured fin, whose rays seem to be exceedingly soft and flexible, and entirely at the command of the strong muscular carina. When he is taken out of the water, and laid on his belly, the carina and fin lie to one side, in the same manner as the ventral fin of the *tertraodon* does when he creeps on the ground. I have been the longer and more particular in the description of the external structure of this animal's body, because I think, as it is of a most singular nature, and endowed with some amazing properties, even the most minute circumstance I was able to observe relating to it, should be mentioned.

'The person to whom these animals belong, calls them Electrical Fish; and indeed the power they have of giving an electrical shock to any person, or to any number of persons who join hands together, the extreme person on each side touching the fish, is their most singular and astonishing property. All the five we have here are possessed of this power in a very great degree, and communicate the shock to one person, or to any number of persons, either by the immediate touch of the fish with the hand, or by the mediation of any metalline rod. The keeper says, that when they were first caught, they could give a much stronger shock by a metalline conductor than they can do at present. The person who is to receive the shock, must take the fish with both hands, at some considerable distance asunder, so as to form the communication, otherwise he will not receive it; at least I never saw any one shocked from taking hold of it with one hand only; though some have assured me, that they were shocked by laying one hand on him. I myself have taken hold of the largest with one hand only, without ever receiving a shock; but I never touched it with both hands, at a little distance asunder, without feeling a smart shock. I have often remarked, that when it is taken hold of with one hand, and the other hand is put into the water over its body, without touching it, the person received a smart shock; and I have observed the same effect follow when a number joined hands, and the person at one extremity of the circle took hold of, or touched the fish, and the person at the other extremity put his hand into the water, over the body of the fish. The shock was communicated through the whole circle as smartly as if both the extreme persons had touched the fish. In this it seems to differ widely from the torpedo, or else we are much misinformed of the manner in which the benumbing effect of that fish is communicated. The shock which our Surinam fish gives, seems to be wholly electrical; and all the phenomena or properties of it exactly resemble those of the electric aura of our atmosphere when collected, as far as they are discoverable from the several trials made on this fish. This stroke is communicated by the same conductors, and intercepted by the interposition of the same original electrics, or electrics per se, as they used

H A D

used to be called. The keeper of these fish informs me, that he caught them in Surinam river, a great way up, beyond where the salt-water reaches; and they are a fresh-water fish only. He says that they are eaten, and by some people esteemed a great delicacy. They live on fish, worms, or any animal food, if it is cut small, so that they can swallow it. When small-lived fishes are thrown into the water, they first give them a shock, which kills or stupifies them, that they may swallow them easily, and without any trouble. If one of these small fishes, after it is shocked, and to all appearance dead, be taken out of the vessel where the electrical fish is, and put into fresh water, it will soon revive again. If a larger fish than they can swallow be thrown into the water at a time that they are hungry, they give him some smart shocks, till he is apparently dead, and then try to swallow or suck him in; but after several attempts, finding he is too large, they quit him. Upon the most careful inspection of such fish, I could never see any mark of teeth, or the least wound or scratch on them. When the electrical fish are hungry, they are pretty keen after their food; but they are soon satisfied, not being able to contain much at a time. An electrical fish of three feet and upwards in length cannot swallow a small fish above two, or at most three inches and a half long. Since I wrote the above description and remarks, I have had Mr. Bancroft's Essay on the Natural History of Guiana put into my hands, in which I find an account of this animal; but as I think he has not been very particular in the description of it, I resolved still to send you the above account, that you might judge for yourself. I ob-

H A D

serve, that his account or description and mine differ in several things; and, amongst others, where he says that those fish were usually about three feet in length; but the one, of which I have sent a slight description, was three feet eight inches. This small variation might indeed have happened without any error; but I am told, that some of them have been seen in Surinam river upwards of twenty feet long, whose stroke or shock proved instant death to any person that unluckily received it.

In addition to Dr. Garden's description, we are enabled, by the curious dissections of Mr. John Hunter, to declare, that the electrical qualities of this fish depend on particular organs. There are two pair of these organs, a larger and smaller, placed on each side of the fish, separated from each other, and constituting, perhaps, more than a third part of the whole animal. In the structure of the organs, there are flat partitions, or septa; and cross divisions between them, by means of thin plates, or membranes; of which transverse plates about two hundred and forty are contained in a single inch, which multiply the entire surface to a vast extent. The nerves of this fish, appropriated to the exercise of it's electrical powers, and which arise particularly from the medulla spinalis, whence they issue in pairs between all the vertebræ of the spine, and supply the organs, are considerably larger than those which are bestowed on any other part for the purposes of action and sensation. For a more minute account of the electrical properties of this fish, see TORPEDO.

GYRINUS. A name sometimes given to a species of the mordella.

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HADDOCK; the *Gadus Æglefinus* of Linnaeus. The generality of writers make the Haddock a species of the *asellus* kind; but, according to the new Artedian system, it is of the genus of *gadi*. Salvian calls it the *asellus major*; and Turner and Willughby, the *oros* and *asinus* of the ancients. Charlton tells us, that this fish was the *caliaris*, *galeris*, and *galaxis*, of Pliny; but this opinion does not seem to rest on substantial evidence.

The Haddock seldom attains to any very considerable size, one of fourteen pounds weight being very unusual; and indeed it is generally esteemed most proper for the table when it weighs only two or three pounds. The body is long and slender; the head slopes down to the nose; the space between the hind-part of the first dorsal fin is ridged; the chin is furnished with a small beard; on the back there are three fins resembling those of the common cod-fish; and on each side beyond the gills there is a large black spot. Superstition, always inclined to discover or invent, assigns this mark to the impression St. Peter made with his finger and thumb when he took the tribute-money out of the mouth of this species; which impression

has descended to the whole race of Haddocks in confirmation of this miracle. The lateral line is black; the upper-part of the body is dusky, or brown; the belly, and the lower part of the sides, are silvery; the irides are also silvery; the pupil is large and black; and the tail is bifid.

Haddocks begin to be in perfection about the middle of November, and continue so till the end of January; but, from that period till May, they become very flaccid, and out of season. In May they begin to recover, and continue gradually improving till they arrive at their greatest perfection.

Fishermen assert that, during stormy weather, Haddocks sink to the bottom of the sea, where they shelter themselves in the sand and ooze till the tempests have subsided; after which they are frequently caught with mud on their backs. In the summer season they subsist on young herrings, and other small fishes; and, in winter, they seek after the stone-coated worms, a species of the *serpula* which fishermen call Haddock meat.

Vast shoals of Haddocks arrive periodically on the Yorkshire coasts; and so regular are they in their annual returns, that for two or three years successively they have been observed to appear on the

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the same day of the month. These shoals sometimes extend three miles in breadth; and, in length, from Flamborough Head to Tinmouth Castle, and perhaps much farther northward.

The following fact may convey some idea of their numbers: Three fishermen, within the distance of a mile from Scarborough harbour, frequently loaded their boat with them thrice a day, taking a tun of fish each time; but, when they sunk their lines beyond the distance of three miles from the shore, they caught nothing but dog-fish, which pursuing the Haddocks as their prey, confine the shoal, like a barrier, within its proper limits.

The large Haddocks quit the Yorkshire coast as soon as they become out of season, leaving behind them prodigious numbers of small ones. On the approach of summer they retire to the shores of Jutland and Hamburg, from whence they make their annual migrations to our coasts.

HÆMATOPUS. A bird called by some authors the pica marina, or sea-pye. In the Linnæan arrangement, this forms a distinct genus of birds of the order of grallæ; the distinguishing characters of which are these: the feet are formed for running; the toes are three in number on each foot; and the apex of the bill is compressed and cuneiform.

HÆMATOPUS ARDEA; the Red-legged Heron. A very beautiful Italian bird, called by the ancients cirris. It is one of the smallest species of the heron kind, and of a yellow chestnut colour.

HÆMORRHUS. See BLOOD-SNAKE.

HAFFHERT. A bird described by Hoier, usually seen at sea, and supposed to be the forerunner of a storm. It is shaped like the falcon, and grows to the size of the common hen. The beak, which is strong and hooked, entirely resembles that of the falcon, except that it is shorter. Fishermen and mariners dread the appearance of this bird; and, on discovering it, always make towards the shore with the utmost expedition.

HAG, MYXINE. A genus of worms; the characters of which are these: the body is slender and carinated beneath; the mouth is ciliated at the extremity; the two jaws are pinnated; and a rayless fin surrounds the tail and belly.

These worms, which inhabit the ocean, perforate dead bodies, that they may with more facility fall to pieces. They sometimes enter the mouths of fishes on the hooks, when suffered to remain long before they are drawn, and totally devour the whole, except the skin and bones; and they are also frequently found by fishermen in excavated fishes. Linnæus ascribes to them the property of turning water into glue.

A species of this genus, about eight inches in length, is commonly caught near Scarborough; and has been distinguished by the name of the Glutinous Hag.

HAIL. A Brazilian appellation for the animal generally called the sloth. This word seems to be pronounced by the creature itself, as its common note; and from this circumstance it is said to have derived its name.

HAKE; the *Gadus Merluccius* of Linnæus. This fish is found from one foot and a half to near twice that length. Its make is slender; its back is of a pale ash-colour; and its belly is a dirty white: its head is flat and broad; its mouth is extremely wide, and its teeth are very long and sharp, particularly those of the lower-jaw. The

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first dorsal fin is small, consisting of nine rays; and the second, which reaches from the base of the former almost to the tail, is composed of forty rays: the pectoral fins contain twelve rays, the ventral seven, and the anal thirty-nine.

The Hake is generally esteemed a very coarse fish; and, in modern times, has seldom been admitted to the table, either fresh or salted; in which last state it is known by the name of Poor John.

These fish are caught in great abundance on various parts of the British and Irish coasts. Formerly there was a stationary fishery of Hake on the Nymph Bank, off the coast of Waterford; the first shoal arriving in June, during the mackerel season; the other in September, at the commencement of the herring one. In this place it was not unusual for six men to catch a thousand Hake in one night, exclusive of other fishes; these were salted, and exported to Spain, particularly to Bilboa: but Smith, in his History of the County of Waterford, published in 1746, laments that this fishery was on the decline from the defection of the shoals. Indeed, many of the gregarious kinds of fishes are apt to change their situations, and desert their haunts, for a course of years; after which they return again. This irregularity may originate from several reasons; but the most powerful seem to be a deficiency of the smaller fish, which served them as food; and the numbers of predaceous animals which constantly harassed them in their migrations.

HAKE, FORKED; the *Blennius Phycis* of Linnæus. This species is generally about a foot long, and three inches deep; but, according to Dr. Borlase, some are caught upwards of eighteen inches in length. The head, as is common to the other species of this genus, slopes down to the nose; the mouth is large; and, exclusive of the teeth in the jaws, a triangular congeries of small teeth appears in the roof of the mouth. The first dorsal fin is triangular; the second fin rises exactly behind the first, and extends almost to the tail; the ventral fins, which are long, consist only of two rays, united at the bottom, and separated or bifurcated towards the end; the vent is placed in the middle of the body, the anal one extending from thence to the tail; the lateral line is incurvated; the tail is rounded; and the colour is a cinereous brown.

This fish, which is sometimes caught on the coasts of this island, but more commonly in the Mediterranean, is known in Cornwall by the name of the great-forked beard. Linnæus refers it to his genus of blenni; but Pennant seems to consider this as an improper distribution, and arranges it with the gadi.

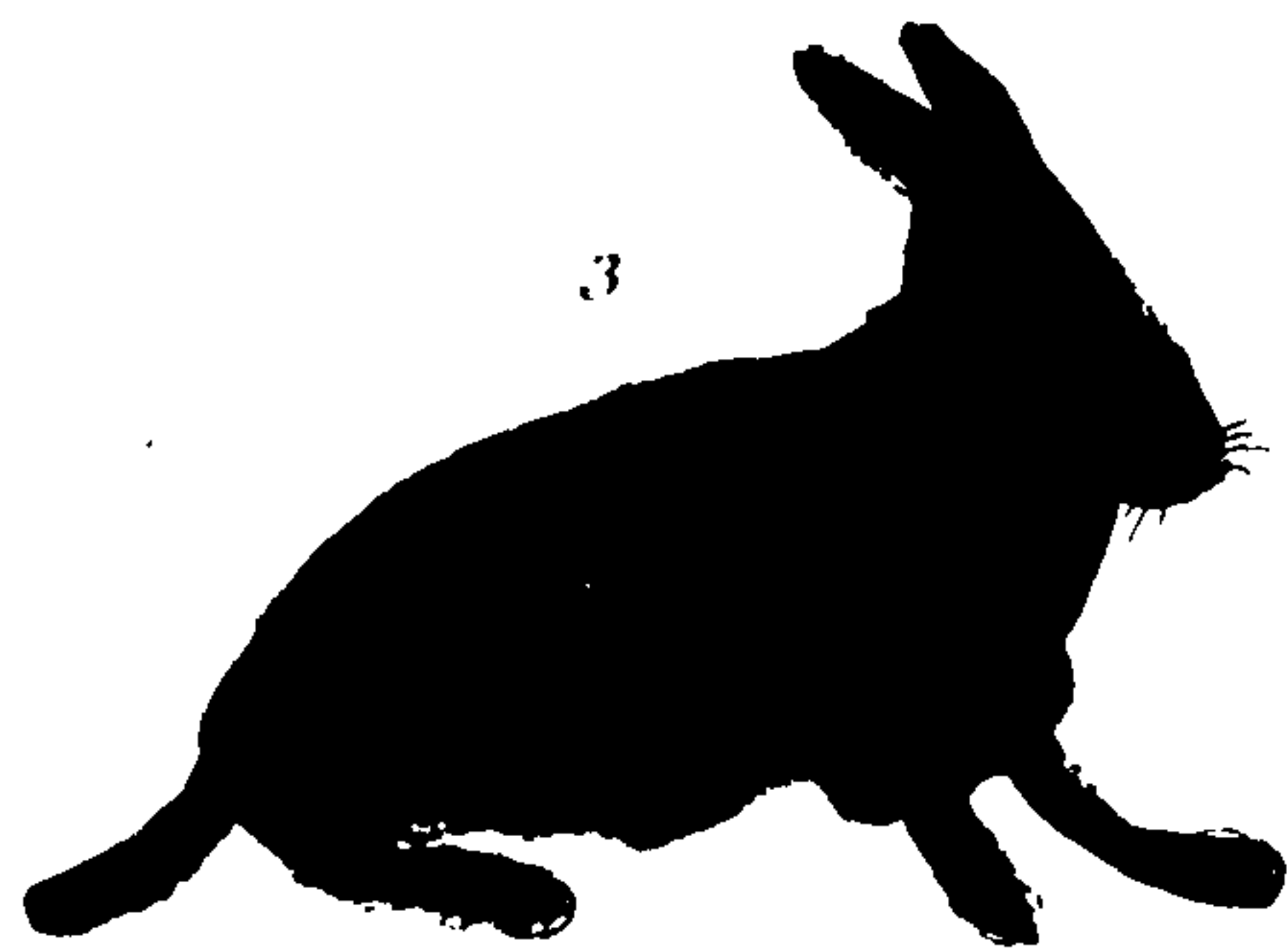
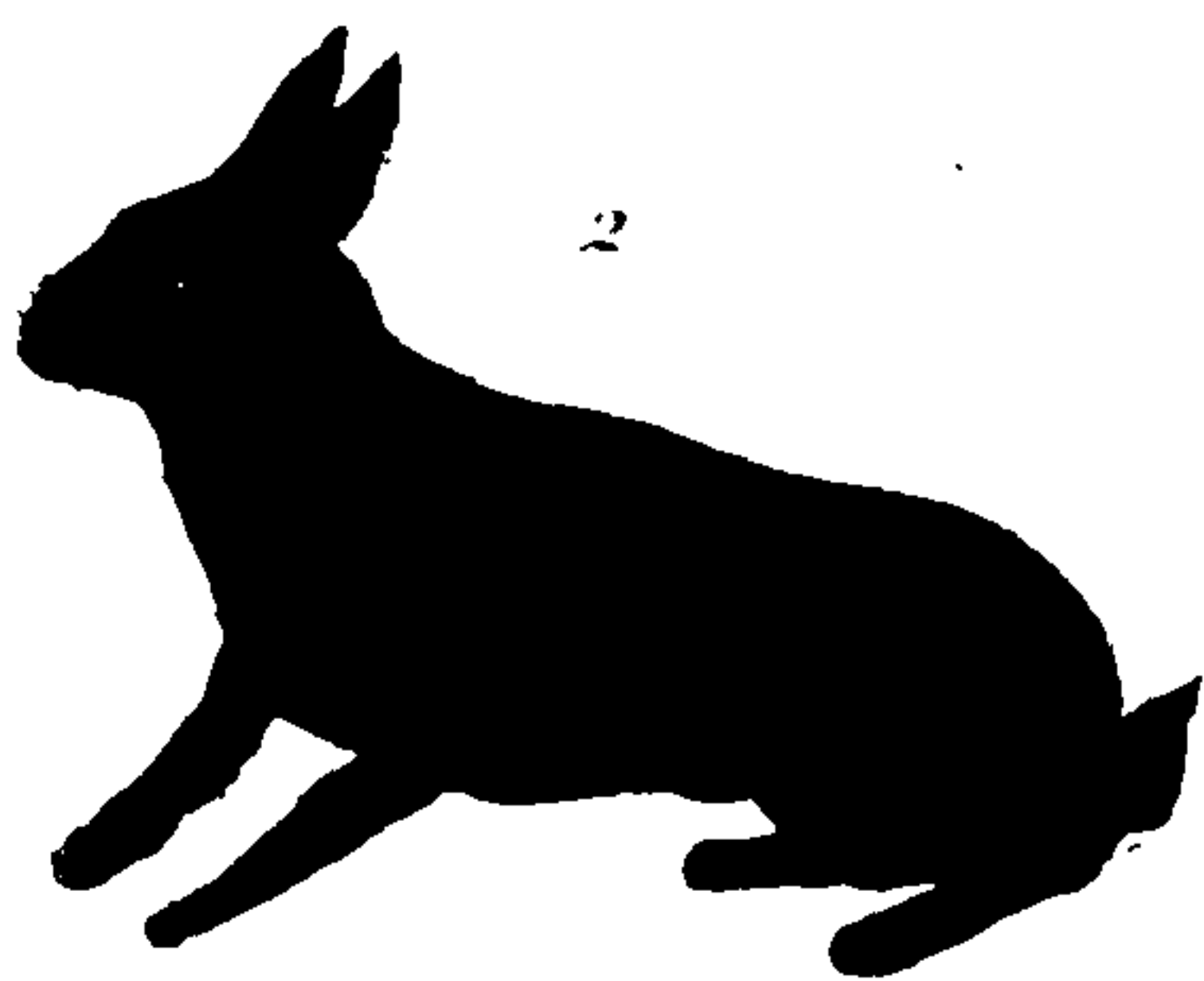
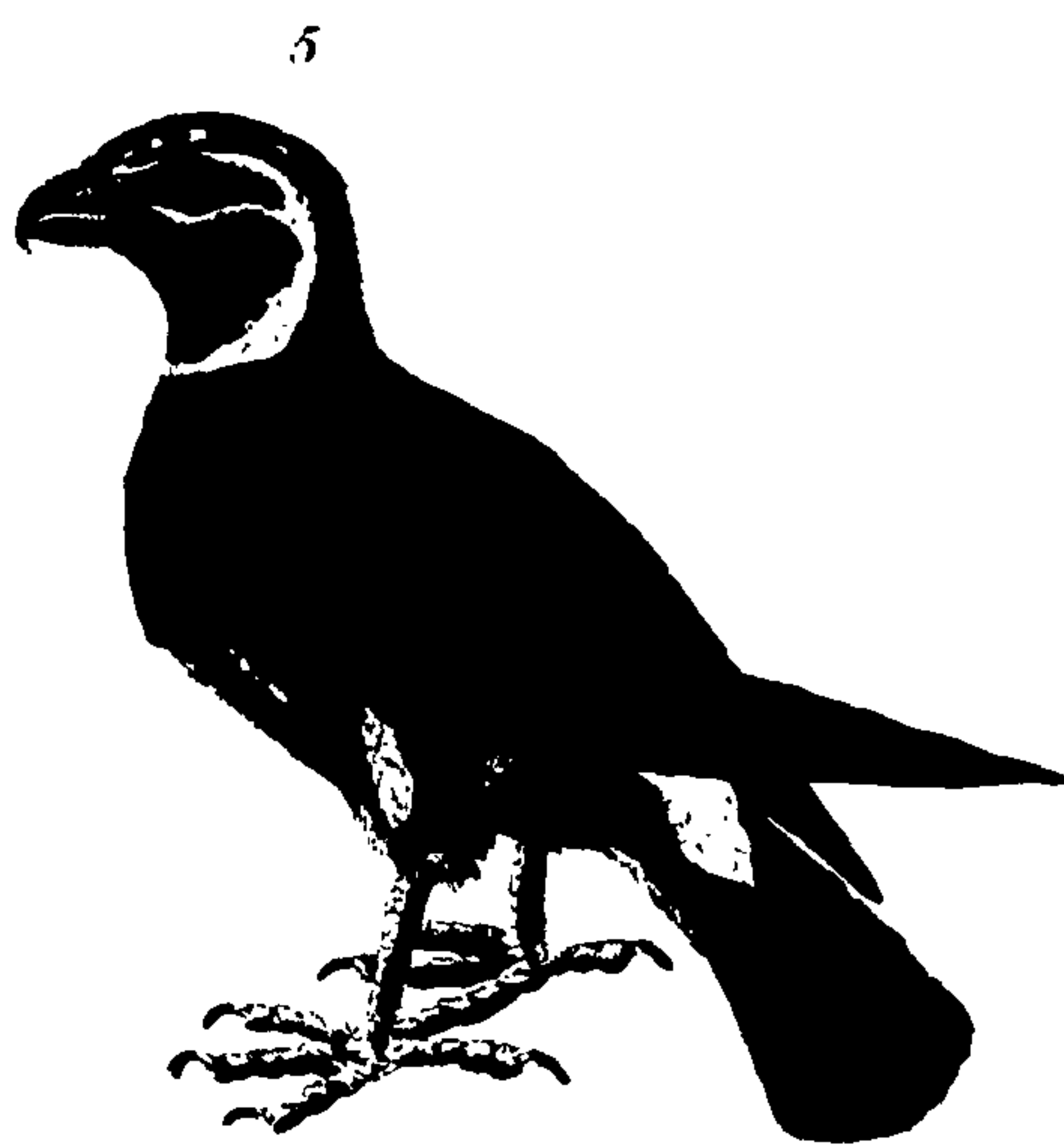
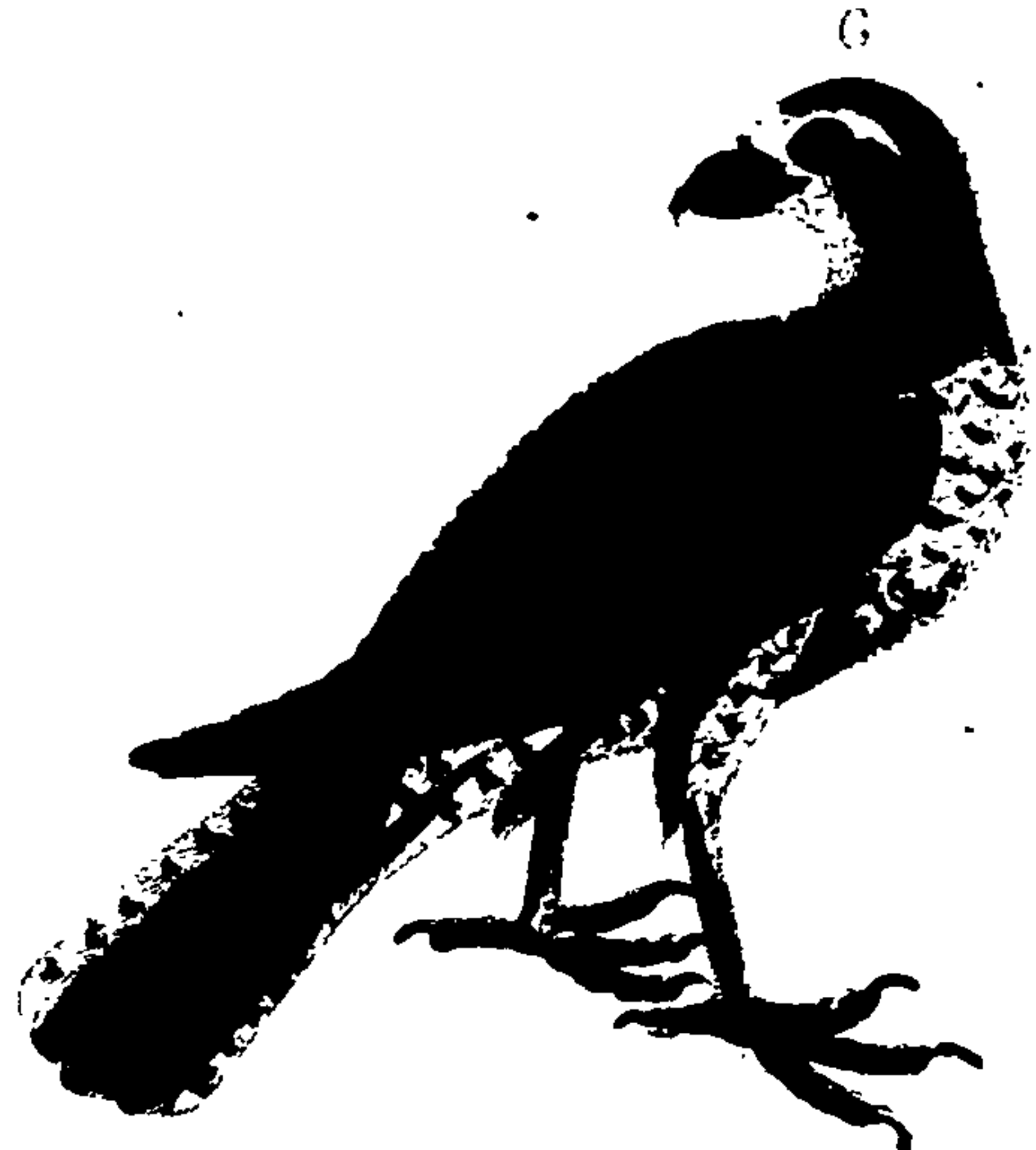
HAKE, LESSER. Mr. Jago first described this rare species, which few of our modern ichthyologists have had an opportunity of examining. It is said to be about five inches long: it has a small beard, a rounded tail, and bifurcated ventral fins; the colour is black, the skin smooth, and its appearance rude and disagreeable.

HALCYON. See KING'S FISHER.

HALECUA. An appellation given by some ichthyologists to the anchovy. The word is a diminutive of Halec, the classical name for the herring.

HALIÆTUS. A name given by some naturalists to the *Aquila marina*, Nvus, Osliaga, or Osprey; the *Falco Osliagus* of Linnæus. This bird is very large, often weighing eleven pounds:

the



1 FORKED TAIL 2 ALPINE HARE 3 VARYING HARE 4 BLACK AND ORANGE COLOURED INDIAN HAWK 5 MARSH HAWK 6 RING TAILED HAWK.

the head and neck are covered with long narrow feathers; the wings are of a plain chestnut colour; and the tail is principally black and white. The plumage of the body is whitish, brown, and rust-coloured, every distinct feather containing all these three colours; the legs are yellow, strong, thick, and feathered a very little way below the knees; and the claws, which are of a deep shining black hue, are strong, and extremely hooked.

This bird frequents Ireland, and several parts of Britain; and principally subsists on fish, which it seizes, when swimming near the surface of the water, by darting down on them.

HALIOTIS. An appellation sometimes given to the ear-shell. See **EAR-SHELL**.

HARDER. A name given by some authors to a fish of the mullet kind; called by Marcgrave *pastor piscis*.

HARDY-SHREW. A term by which some naturalists express the *mus araneus*; usually called the Shrew, or the Shrew-mouse.

HARE. In the Linnæan distribution of nature, the Hare makes a distinct genus of animals of the order of glires. The characters are these: there are five toes on the fore-feet, and four on the hind; the ears are long; the tail is short; and there are two cutting-teeth in each jaw. Under this genus are comprehended all the different species of the Hare and rabbit kind.

HARE, COMMON. The Common Hare is one of the most timorous and persecuted of all animals. It is weak and defenceless, and therefore endued in a remarkable degree with the preserving passion of fear: this principle renders it perpetually attentive to every alarm, and keeps it continually in a lean state. In order to enable this creature to perceive the most distant approaches of danger, nature has provided it with very long ears, which, like tubes applied to the auditory organs of deaf persons, convey to it such sounds as are remote; and the motions of the Hare are directed accordingly. It has large prominent eyes placed backwards in it's head, in such a manner as to receive the rays of light on every side; so that, while it runs directly forward, it can almost see distinctly behind: it's eyes are never wholly closed; for the animal being perpetually on the watch, it even sleeps with them open. The muscles of it's body being strong, and without fat, it has therefore no superfluous burden of flesh to carry: and, to assist it in escaping from it's pursuers, the hinder legs are considerably longer than the fore, which adds to the swiftness of it's motions; and so very sensible is the Hare of this peculiar advantage, that, when started, it always makes towards the rising ground.

This creature being so well formed for a life of escape, it might reasonably be supposed to enjoy a state of tolerable security; but it's enemies are so very numerous, that it seldom lives the usual term prescribed to it by nature. Every species of the dog kind pursues it by instinct; the cat and the weasel tribes exercise all their little arts to ensnare it; and birds of prey, ants, snakes, and adders, drive it from it's form, particularly during the summer season. But man, as he is it's most powerful, so is he also it's most inveterate and destructive enemy: it is hunted by the sportsman, shot and snared by the poacher, and often finds it's most cruel adversary in the farmer whose lands it frequents. Persecuted thus on every side, did it not find a resource in it's amazing fertility, the whole race would long since have been exterminated.

The Hare being amazingly prolific, is capable of conception at the age of a few months: she goes with young but thirty days, and generally brings forth three or four at a time. Buffon, and some other naturalists, strongly assert the doctrine of superfetation, or conception on conception, in this animal; but, as Hares breed frequently in the space of one year, their vast numbers may be accounted for without acceding to an hypothesis which seems contrary to the ordinary course of nature.

The young of these animals are brought forth with their eyes open: their dams suckle them for twenty days; after which time they leave them, and begin to shift for themselves. Hence we may observe, that the education these creatures receive is but trifling, and their family connections but of short duration. With respect to the rapacious kinds, the dam continues to tutor her young for several months successively; teaches them the arts of rapine; and keeps them under her care till they are able to hunt for themselves. But a long connection of this kind would be quite unnecessary, as well as dangerous to the timid animals now under consideration: their food being procured with facility, their associations, instead of affording them protection, would only expose them to their pursuers. However, they seldom migrate far from the spot where they are produced, but each animal makes a form at a small distance; shewing a predilection rather for the place of their nativity than the society of their kind.

These animals repose in their forms in the daytime; and may be said to live only by night, when they go forth for the purposes of coupling and feeding. They do not however pair except at the rutting-season, which begins in February; and then the male pursues and discovers the female by the sagacity of his nose; and they are frequently observed by moon-light, playing about, skipping, and pursuing each other, in the most sportive manner; but the least motion, the slightest breeze, or even the falling of a leaf, is sufficient to disturb their revels; and they instantly fly off, each pursuing a separate track.

Hares live on roots, leaves, fruits, and corn; and prefer such plants as afford the most succulent repast. They also strip the bark from trees during the winter season, and feed almost indiscriminately on the spoils of every tree except the lime and the alder. When kept tame, they are subsisted on lettuce and other hortulane productions; but the flesh of such of them as have been thus brought up, is always destitute of that luxurious relish which distinguishes that of wild Hares.

The Hare seldom lives above seven or eight years at the utmost: it arrives at it's full perfection in one year; and this multiplied by seven, the ratio which the maturity of every creature bears to it's duration, gives the extent of it's life. It is said, however, that the females are longer-lived than the males; and some creditable authors confirm this circumstance, though Buffon seems to question it's authority. In our climate, these creatures pass a life of solitude and silence: they are seldom heard to cry, unless when either seized or wounded; and their voice is not so sharp as that of some other animals, but approaches more nearly to the squalling of an infant. They are far less wild than their habits and dispositions seem to indicate, being of a complying nature, and easily susceptible of some degree of education: they even become fond and caressing; but being incapable of attachment to any particular person, they will

strive to regain their native liberty on the first opportunity. As they have excellent ears, and sit on their hind-legs while using their fore-paws as hands, they have frequently been taught to beat the drum, to dance to music, and to perform some part of the manual exercise.

But the natural instincts of Hares for their preservation are far more extraordinary than their artificial acquirements. They make themselves forms particularly in such places where the colour of the grass seems most nearly allied to their own; which forms open to the south in winter, and to the north in summer. The soles of their feet being furnished with hair, their motions are unattended with noise; and, if their strength was equal to their swiftness, no other animals would be capable of overtaking them. But they generally exhaust their powers at the first effort; and are much more easily caught than foxes, which are but slow creatures when compared to them.

When the Hare hears the hounds at a distance, it flies for some time from a natural impulse, without managing it's strength, or using any other means but celerity in order to it's preservation. Having gained some hill or rising ground, and left the dogs so far behind, that it's ears no longer receive their cries, it stops, rears on it's hinder legs, and looks back, for the purpose of satisfying itself whether it's pursuers are still in sight or not: but the dogs having once gained the scent, trace it with united and unerring skill; and the poor animal soon again receives indications of their approach. Sometimes, when hard hunted, it will start a fresh Hare, and squat in the same form; at others, it will creep under the door of a sheep-cot, and conceal itself among the sheep; sometimes it will enter a hole, like the rabbit; at others, it will run up one side of a quickset hedge, and down the other; and it has even been known, when opportunity served, to ascend the top of a cut hedge, and run a considerable way, by which stratagem it has effectually evaded the hounds. It is also not unusual for the Hare to betake itself to furze-bushes, and leap from one to another, whereby the dogs are frequently misled. However, the first doubling which a Hare makes generally affords a key to all it's future attempts of that kind, the latter exactly resembling the former.

Young Hares leave a stronger scent behind them than old ones, because they tread heavier in consequence of the weakness of their limbs; and the more fatigued these harmless, persecuted animals, become, the stronger scent they leave behind them. The males are distinguishable by their preferring hard highways, feeding at a greater distance from some cover, and by making their doublings of greater compass than the females. The male, after having taken a turn or two round his form, frequently leads the hounds five or six miles on a stretch; but the female keeps close by some cover side; turns, crosses, and winds among the bushes, like the rabbit; and seldom runs directly forward. In general, however, both the male and female vary their artifices according to the weather: in a moist day, they keep close to the highway, if within their reach, because their scent is then strongest on the grass. If they approach the side of a grove or spring, they forbear to enter, but squat down till the hounds have overtaken them; and then turning along their former track, make to their old form, in hopes of there finding shelter and safety.

The influence of climate is very perceptible on these animals, and indeed on most others. In those countries which border on the north pole, they become white in winter, and assemble in troops of four or five hundred. The Hares of hot countries, particularly of Italy, Spain, and Barbary, are smaller than those of Britain; but such as are bred in the Milanese are said to be the best in Europe. From the torrid zone to the vicinity of the polar circle, there is scarcely a country where these creatures are not found: they inhabit every part of Europe; and most countries of Asia, Africa, and America.

The fur of Hares is of vast importance in the hat manufactory; and many thousands of their skins are annually imported into this kingdom from Russia and Siberia. The flesh of these animals has been esteemed a delicacy by some nations, and utterly detested among others. The ancient Britons, Jews, and Mahometans, all regarded the Hare as an unclean creature, and religiously abstained from tasting it's flesh: on the contrary, there are scarcely any other people, however barbarous, who at present do not consider it as the most agreeable food. Fashion seems so to govern all the senses, that what mankind at one time consider as beautiful, fragrant, or savoury, is at another period, or in another country, regarded as deformed, disgusting, and nauseous. The same flesh, which the ancient Romans so much admired, as to call it the Food of the Wise, was deemed unfit to be eaten by the Jews and Druids; and even the moderns, who unite in ranking the flesh of this animal among the delicacies of the table, have nevertheless very different ideas with respect to the art of dressing it.

HARE, VARYING; the *Lepus Variabilis* of Pallas. This species, which inhabits Norway, Lapland, Russia, Siberia, Kamtschatka, and Hudson's Bay, is also found on the tops of the highest hills in Scotland; but never descends into the vales, or associates with the common Hare. It generally shelters itself in the cliffs of rocks, is easily tamed, and becomes extremely playful and amusing. Towards the month of September it changes it's colour, and resumes it's summer dress about April; but it is only in the extremely gelid regions of Greenland where it always remains perfectly white. In Siberia it assumes the colour of snow during the winter, not only in a state of liberty, but also when tamed, and kept in the stove-warmed apartments of the natives, as has been proved by experiments. In the last-mentioned country, these animals assemble in troops of five or six hundred, migrating in the spring, and returning in autumn: to this they are compelled by the want of subsistence; the lofty hills being in the brumal season destitute of vegetables for their support, they descend to the plains, and exchange their safe and beloved retreats in the mountains for situations which, though they afford plenty of food, teem with danger.

The Varying Hare is smaller than the common species. In the summer season it's fur is of a light grey colour, with a slight admixture of black and tawny; it's tail is always white; it's ears are short; it's legs are slender; and it's feet are closely and warmly furred. In winter, the whole of the animal changes to a snowy whiteness, except the tips and edges of it's ears, which remain black.

In the southern and western provinces of Russia there is a mixed breed of Hares, between this and the common species, which sustains only a partial

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loss of it's colours; the sides, and the more exposed parts of the ears and legs, becoming white in the severer months, while the other parts remain unchanged. This variety is by the Russians called *Ruffak*: and prodigious numbers are taken in snares for the sake of their skins only; the Russians and Tartars, like the ancient Britons, holding the flesh of Hares in the utmost detestation.

HARE, CAPE; the *Lepus Capensis* of Linnæus. This species, which inhabits the interior parts of the country near the Cape of Good Hope, frequents the most rocky and mountainous situations, and takes up it's abode in the fissures of the cliffs. The ears are long, and dilated in the middle; the outsides being naked and rose-coloured, and the insides and edges covered with short grey hairs. The crown and back are dusky, mixed with tawny; the cheeks and sides are cinereous; the breast, belly, and legs, are rust-coloured; and the tail, which is bushy, turns upwards. This animal is about the size of the rabbit.

HARE, BRAZILIAN. The Brazilian Hare frequents woods, but never burrows; it is extremely prolific; and it's flesh is highly esteemed. It's ears, which are very large, resemble those of the common kind; it's face is of a reddish hue; it's chin is white; a white ring encircles it's neck; it's body is entirely covered with a dark cinereous fur; it's belly is whitish; and it has not even the very rudiments of a tail.

HARE, ALPINE. This animal has short rounded ears, a long head, very long whiskers, and two very long hairs over each eye. The tip of the fur is white, the middle being of a bright ferruginous hue, and the base dusky; but it is so intermixed with long dusky hairs, that at first sight the whole appears of a bright bay colour.

These Hares, which are about nine inches long, inhabit the snowy mountains of the Altaic Chain, extending to the Lake Baikal, and from thence to Kamtschatka: and they are also said to be natives of the Alentian or Fox Islands, in the New Northern Archipelago. They sometimes burrow between rocks, but oftener lodge in their fissures. In cloudy weather, they assemble together, and lie on the rocks; but, at other times, they are found in pairs, or more, according to conveniency. Their cry, which is shrill, resembles the chirping of sparrows. On the smallest alarm, they run into their holes, and are therefore shot with much difficulty.

By a providential instinct, these creatures guard against the rigours of their hyperborean retreats. Towards autumn, parties of them collect together vast quantities of the choicest herbs and grasses perfectly dried, which they place beneath the shelter of some impending rocks, between the chafins, or round the trunks of trees. In many parts, these herbs appear scattered, as if with an intention of drying them properly. The heaps, which are of various sizes, according to the number of animals employed in forming them, are sometimes six feet in height, and as many in diameter at their bases; but their usual dimensions are about three feet each way. These ricks are often the origin of fertility among the rocks; for their reliques, mixed with the dung of the animals, rot in the barren chafins, and form a soil productive of various herbs and roots.

The sable-hunters frequently derive the most substantial advantages from the labours of the Alpine Hares: for, being obliged to traverse deserts and mountains at considerable distances from those

H A R

places where subsistence for men or horses is to be found, their cattle would often perish through want, did not the ricks of these little provident animals help to support them; which are easily discovered by their height and form, even when totally covered with snow. For this reason the Alpine Hare has a name among every Siberian and Tartarian nation where it is found: a circumstance which marks it's importance to society; for few animals, so diminutive in their size, are noticed in those regions, unless possessed of some valuable or attractive qualities.

HARE, OGOTONA. This animal, which was first noticed by Dr. Pallas, is only six inches long; and the weight of the male does not exceed seven ounces. It has oblong oval ears, a little pointed; it's hair is long and smooth; that of it's body is brown at the roots, light grey in the middle, and white at the tip, intermixed with a few dusky hairs; it's belly is white; the outsides of it's legs are yellowish; and it's nose is marked with a yellow spot; which colour likewise covers the space about it's rump.

This species, which inhabits the vast desert of Mongolia, and the frontiers of China towards Tartary, lives in the open vallies, and on rocky, barren mountains. The Mongolian Tartars call it *Ogotona*. It sometimes burrows like the rabbit, and at the bottom of it's hole forms a nest of soft grass.

These animals, which wander abroad principally in the night-time, feed in the vallies on the tender bark of a sort of service, and the dwarf-elm; and likewise on various vegetables. Before the approach of winter, they collect large quantities of herbs, with which they fill their holes; and, directed by the same instinct as the Alpine Hares, they also form hemispherical ricks of hay, each about one foot high, for their support during the severity of the weather. Hawks, magpies, and owls, indiscriminately prey on them; but their most formidable enemies are the fitchet, the ermine, and the cat.

HARE, CALLING; the *Lepus Pusillus* of Pallas. This curious species is only about six inches in length, and seldom exceeds four ounces in weight. The head is long, and covered with fur to the very tip of the nose; the ears are large and rounded; and the legs are very short. The whole body is covered with very soft, long, smooth fur, of a brownish lead-colour; and, towards the ends, of light grey, tipped with black.

These creatures, which inhabit the south-east parts of Russia, delight in sunny vallies and fertile hills, especially near the margins of woods, into which they can run for shelter on any emergency. Indeed, they are so very timid in their natures, and concealed in their way of life, as rarely to be seen, except such as have fallen into snares laid for ermine. About the Volga they are called *Ser Jaroi Sacubik*, or Ground-Hares: the Tartars give them a name, which, in their language, signifies the Barking-mouse, on account of their cry; and the Kalanucs call them *Russa*.

The Calling-Hares burrow in the earth; forming long galleries, at the ends of which they make their nests: and so numerous and intricate are the avenues which lead to their retreats, that they would with great difficulty be discovered, did not their voice betray them. This voice resembles the piping of a quail, but is so loud, that it may be heard at the distance of half a German mile; and they

H A R

they reiterate it, by just intervals, at night and morning, but seldom in the day-time.

The female brings forth six young at a time, blind, and destitute of hair: she suckles them often; and carefully covers them with the materials of her nest.

These creatures are extremely harmless and inoffensive, and easily tamed.

HARE, AMERICAN. This animal is eighteen inches long; and sometimes weighs upwards of four pounds. The ears are tipped with grey; the upper part of the tail is black, and the lower white; the neck and body are mixed with cinereous, rust-colour, and black; the belly is white; and the legs are a pale ferruginous.

This species inhabits all parts of North America. In the southern provinces of the United States, it retains its colours through every season of the year without variation; but, in New England, Canada, and Hudson's Bay, it changes its short summer fur, at the approach of winter, for one very long, silky, and silvery; the edges of the ears only preserving their colour. At this season it is in the highest perfection for the table; and affords many excellent repasts to those who winter in that inhospitable climate.

These Hares breed twice a year, and produce from five to seven at a time. They lodge under fallen timber, and in hollow trees; and in spring shelter their young in the woods, to which, when pursued, they run for protection. They never burrow nor migrate, but always frequent the same places.

HARE, JAVA, OF SUMATRA; the *Mus Leporinus* of Linnæus. This animal possesses the same general characters with the Guinea-pig kind: its head is small and slender; its ears are prominent, naked, and round; the upper part of its body is of a reddish colour; the breast and belly are white; the legs are long; the fore-feet are furnished with four toes, the hind with three; and the tail is short. This creature is equal in size to the Common Hare.

HARENGIFORMES. A genus of fishes, approaching to the herring in shape: the principal character of which is, that a serrated line, composed of two scales, runs along the bottom of the belly; to which may be added, that the sides and belly are of a bright silver colour; and that the scales are large and loose.

HARENGUS. See **HERRING**.

HARLEQUIN DOG. A species of Dog not very dissimilar to the small Danish Dog, except that it is longer, and generally of a black and white colour: however, there are some white and cinnamon, and others mottled with various colours.

HARP-SHELL. An appellation given to a species of dolium. See **DOLIUM**, and **LYRA**.

HARRIER. A well-known kind of dog, remarkable for his sagacity in tracing, and boldness in pursuing his game. There are several varieties, but all differing in their services; some being adapted for the pursuit of one sort of game, and some for another. See **DOG**.

HART. A stag, or male deer, which has completed his fifth year. If the king or queen hunt him, and he escape, he is called a **Royal Hart**: if, in consequence of such hunting, he is driven out of the forest, proclamation is usually made in the adjacent places, that, from a regard to the entertainment the animal has afforded the sovereign no person is to hunt him, or prevent his returning

H A R

to his former cover; on which he has usually been called a **Hart Royal Proclaimed**. See **DEER**.

HARVEST-FLY; Cicada. The name of a large Fly, remarkable for the noise which it makes during the summer months, and particularly about the time of harvest. Authors in general have translated Cicada by the English word **Grasshopper**; but this is extremely erroneous, the Cicada being a very different creature from the grasshopper. In France, where it is very common, it is called the **Cigale**. Italy, and all the warm climates of Europe, abound with it; and, in almost every country where it is found, the vulgar give it a name expressing the **Harvest-Fly**; but in England this insect is wholly unknown. It is probable, therefore, that our authors, who, according to the description of the ancients, found the Cicada very noisy, fancied the grasshopper must be the same creature, this being the most querulous of all English insects in the summer season.

The Cicada is furnished with four wings; and its body is short and thick. The great, or common Cicada, is by far the largest of any known species of short-bodied flies; and even the smaller kinds are larger than the hornet.

To the two species of Cicadæ mentioned by Aristotle and the other ancient writers, Reaumur has added a third, of the middle size between the *achetæ* and the *tettigoniæ* of antiquity, the greater and lesser Cicadæ of the moderns.

These three species differ not only in magnitude, but also in colour. The large kind is of a deep black brown hue, with a small admixture of yellow on the breast, and on some of the rings of the body: the middle-sized kind, first noticed by Reaumur, is of a paler brown colour, and contains more yellow; but is more particularly distinguished by two cross lines of yellow, which bear some resemblance to the Roman X: and the third kind, the smallest of all, is of a reddish colour with a considerable quantity of yellow. These are the distinctions of Reaumur; who, with a candour that does him honour, acknowledges, that he had not such favourable opportunities as he could have wished of examining the Cicadæ of different countries; and is of opinion, that future naturalists will increase the catalogue of species.

It has been generally supposed, that the noise which the Harvest-Fly, or the Cicada, makes, is occasioned by a swift motion of the wings, and their friction against the breast; together with the grating of the under pair of wings in their passage against the upper ones. Were this the real case, it would be difficult to assign a reason why the female Cicada should not emit the same sound as the male, since she is furnished with exactly the same organs for singing: but, in fact, the matter is far otherwise; and the bare inspection of the body of the male Cicada will prove, that the noise must originate from other causes than have commonly been believed. If with metaphysical precision we only allow that to be a voice, which is an articulation of the air, thrown from the lungs in its passage through the larynx, and other corresponding parts, then indeed the Cicada has properly no voice; but if we extend the meaning of the term, and include the several sounds made by insects with other organs, yet intelligible to their fellow insects, we must allow the Cicada has a voice, and in reality a strong one, the organs of which are not in the lungs and throat, but in the belly, as has been fully proved by Reaumur in his

his History of Insects. By the admirable researches of this ingenious naturalist, it appears, that though the female Cicada is destitute of the organs of sound which are found in the male, she has nevertheless an instrument of peculiar service for lodging her eggs in safety, with which the other sex is not supplied. That the eggs of the Cicada may succeed properly in hatching, it is necessary that they should be lodged in the substance of the wood; and for this purpose the instrument of the female is peculiarly adapted. Indeed, most other insects which deposit their eggs in wood, prefer the young branches and shoots of trees and shrubs in a state of vegetation, where the eggs receive nourishment from the circulating juices: the Cicada, on the contrary, aware that her eggs only want a proper lodgment, always lays them in dry or rotten sticks. She seizes whatever kind of wood she meets with answering this description; and, making a row of perforations, puts an egg into each.

Leaving their first exuviae in the nest, the young insects quit their holes; and immediately dropping on the ground, make their way into it, and remain buried for some time in the form of hexapode worms. Having continued a short space in those subterraneous retreats, they become transformed into a sort of nymphs, endowed with a locomotive power, though they have not attained to their perfect growth. These creatures remain in the nymph state two years; and, at the approach of their final transformation into the fly-state, they quit the earth, crawl up the bodies of trees, and fastening themselves to the branches, pass through the various changes allotted to the insect tribe before they arrive at a state of perfection; after which they become denizens of the sky.

In hot climates, these insects are extremely disagreeable, on account of their discordant, grating noise. The ancients, indeed, revenged themselves by eating them, and accounted them an excellent dish in all their states; but were particularly fond of the nymph, or tatty-gometra. They also preferred the females, when they were full of eggs; and the males, before they had performed the business of impregnation, because of the quantity of semen they contained.

HASELA. A fresh-water fish of the malacotomous or leather-mouthed kind; by some reputed a species of the mullet; and, by others, of the chubb. It is a smooth, soft, and small fish, having an oblong and slender body; and seldom exceeds six inches in length. It is in the highest perfection during the months of April and May; and is caught both in lakes and rivers.

HAVELDA. An appellation given to a bird of the duck kind common in Iceland. It is the *anas caudata Islandica* of naturalists, or the long-tailed Iceland duck.

HAUSTELIUM. A name sometimes used to express a peculiar kind of shell-fish of the genus of purpura; called in French the becasse; and in English, the woodcock-shell. Its beak is remarkably long and slender. There are several species, some of them extremely elegant.

HAUTIN. A provincial appellation for the fish called also the outin, and known among naturalists by the name of the oxyrinchus.

HAWFINCH; the *Loxia Coccothraustes* of Linnæus. An English name for the grosbeak, called frizone by the Italians. See GROSBEAK.

HAWK. A predaceous bird of a bold and generous nature, of which there are several species.

In the Linnæan distribution, the Hawk gives name to a whole order of birds, distinguished by a hooked beak projecting on both sides from the upper mandible; and comprehends four genera, the vulture, the falcon, the owl, and the butcher-bird.

Naturalists are far from being unanimous with respect to the number and division of the Hawk kind. However, the most commodious distribution is into the long and short-winged kinds: the former includes the falcon tribe, properly so called; and the latter the Hawks, such as the Sparrow-Hawk and the Gos-Hawk.

HAWK, RING-TAILED. This species, which is a native of Hudson's Bay, was first described by the ingenious Edwards. It is about the size of the common crow; the bill is of a dark horn-colour, and hooked, as in other Hawks; and the cere is yellow, and thinly beset with black stiff feathers, which also surround the angles of the mouth. The head is dusky or blackish, with a small admixture of white on the forehead near the bill; the hinder part of the head, and the fore-part of the neck, are clay-coloured mottled with dusky brown; the upper part of the neck, the back, and the wings, are dusky brown; but the edges of some of the middle quills are cinereous. The inner coverts are sprinkled with small brown spots; and the inner webs of the quills are transversely barred with faint, narrow, dusky lines. The rump and the covert-feathers of the tail are white, which uniting with the white feathers beneath the tail, form a white ring; the middle feathers of the tail are dusky, and the next on each side of a blueish ash-colour; but the exterior are white; and all of them are marked with eight dusky lines. The belly, breast, thighs, and coverts under the tail, are white, with reddish brown spots transversely waved on the breast and thighs, in the form of hearts on the beginning of the belly, and of crescents on the lower belly and the coverts under the tail. The legs and feet are of a gold colour; the exterior toe is joined to the middlemost by a membrane; and the claws are black.

HAWK, INDIAN, BLACK AND ORANGE-COLOURED. This bird, which is a native of the Brazils, is small-sized, but extremely strong in its make: the bill is perfectly aquiline; the thighs are brawny; the legs are thick and short; and the toes are armed with very sharp and strong talons; so that it may with propriety be called the Little Eagle. The bill is ash-coloured, and covered at the base with a yellow skin; the eyes are surrounded with yellow spaces, encircled with black feathers, which terminate in lines of the same colour drawn down each side of the head and neck; and these black lines are again encompassed with white, extending to the base of the bill. The top of the head, the upper side of the neck, the back, and the upper sides of the wings and tail, are black, shining with a blue and purplish gloss; the sides of the wings are also black; the covert-feathers within side the wings are white; and the inner webs of the greater wing-feathers, and those of the tail, are transversely barred with white and black. The under-side of the bird, from the bill to the tail, is of a bright orange-colour; the legs and feet are of a bright gold-colour; and the claws are black.

HAWK, MARSH. This bird is very large; its wings, when extended, measuring three feet and a half from tip to tip; and from the extremity of the bill to the end of the tail it is two feet long. The bill is of a blueish colour; at the basis of the up-

per mandible there is an orange-coloured skin, in which the nostrils are placed; the eyes are also encircled with an orange-coloured skin; the irides are hazel-coloured; and round the nostrils and the angles of the mouth there are some black hairs or bristles. A black line passes from the bill through the eye; and from the nostrils proceed white lines just above the eyes, which bending down the sides of the head, unite under the throat; there is also a white mark under each eye: the rest of the head, the neck, and the breast, are of a dusky brown colour, with a small admixture of white on the top of the head; the back, wings, and tail, are a dusky brown, except that the latter has four transverse bars of a blackish colour; and the rump and covert-feathers on the upper side of the tail are white. Part of the breast, the belly, thighs, and the covert-feathers under the tail, are a reddish yellow; the legs and feet are covered with orange-coloured scales; and the claws are black.

The **Marsh Hawk** is a native of Pennsylvania. It frequents the marshes in the summer season, preying on small birds, frogs, snakes, and lizards; but it migrates towards the approach of winter.

HAWK, INDIAN BROWN. This bird is about fourteen inches long: the bill is blueish with a black tip; the irides are yellow; the head, back, and rump, are brown; the coverts of the wings are brown bordered with white; and the quill-feathers are dusky, edged with light brown. The fore-part of the neck, the breast, and the belly, are white, marked with numerous yellow lines of a semicircular figure; the tail is a pale brown, transversely marked with four dusky lines; and the legs are of a very faint yellow hue.

HAY. An animal of the monkey kind, about the size of the spaniel-dog; having a face nearly resembling the human, and a belly depending, like that of a sow with young. The hair is greyish; the tail is very short; and the legs are hairy, and furnished with long claws. This creature is naturally very wild, active, and playful; but, when taken and confined, it soon becomes mild and tractable.

HAY-WORM. A particular species of Worm found among hay, with whose origin and changes we are as yet but imperfectly acquainted. It is about half an inch long, and of a whitish colour shaded with faint stripes of a yellowish brown. It has fourteen feet; and possesses other evident marks of it's being a real caterpillar.

HAZEL-HEN. A bird of the gallinaceous kind, common in the German woods, and supposed by many naturalists to be the attagen of the ancients. It is about the size of a small pullet; it's belly is white; it's breast is white, variegated with black; it's throat is reddish; and below the beak of the male there are some black feathers, by which it may be distinguished from the female. The head, which is of a greyish brown colour, has on each side of it a white line; the back and rump are prettily variegated like those of the partridge; the sides are of a yellowish or reddish brown hue intermixed with white; the wings and tail are variegated with black, brown, and white; but the latter has also an admixture of red. This bird feeds on vegetables; and it's flesh is much esteemed.

HEART-SHELL. A genus of shells by some authors referred to the peccunculus, or cockle kind; but by more modern writers justly made a genus of itself. The distinguishing characters are these: the shell is bivalve, of a globose elated

form, deeply fulcated, in some species imbricated, in others prickly, but never auriculated; and always bearing a general resemblance to the figure of a heart.

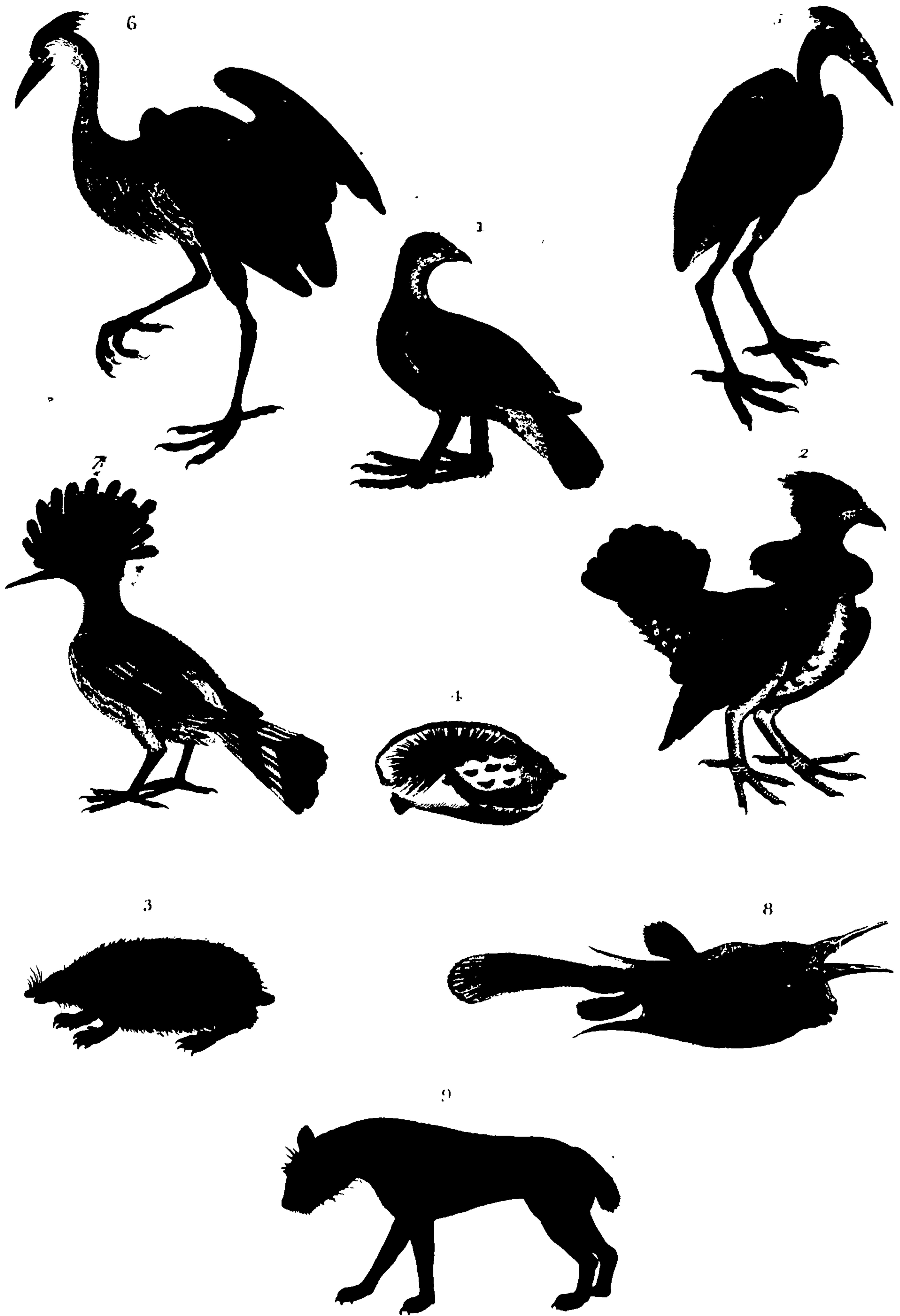
This genus contains several very remarkable species; one of the most elegant of which is the imbricated Heart-Shell, called by French conchologists *Faitage*, or *Roof-Shell*, from it's resembling the rafters of a house; another species is denominated the *Cabbage-Shell*, from it's undulations, which resemble the garden curled cabbages; and to this genus also belongs the *Noah's Ark Shell*.

HEATH-COCK. An appellation given by many authors to the common grouse. See **GROUSE**.

HEATH-COCK, RUFFED. This very curious bird, which was first figured and described by Edwards, is nearly of a middle size between the pheasant and the partridge: the bill is like that of the hen, of a brownish horn-colour; the feathers bend forwards to the nostrils, which they cover; those on the crown of the head are pretty long, and Edwards supposes that the bird can erect them like a crest at pleasure. The plumage on the neck, which is long, may be either raised in the form of a ruff, or permitted to lie flat, according to the fancy of the fowl; the head, neck, back, wings, and tail, are beautifully variegated with dark and light brown, together with a small admixture of black; the end of the tail is cinereous, and within that there is a broad transverse black bar; the under-side of the tail is marked and coloured like the upper, except that the shades are fainter; the inner covert-feathers of the wings are light brown and white, but their insides are cinereous; the plumage between the back and the wings is orange and black, with white tips; the throat is a bright brown inclining to orange; the breast, belly, and thighs, are white, with a faint tincture of orange and black semilunar spots on the breast and sides; and the legs are covered down to the feet with white filiform feathers.

This bird spreads it's tail like the turkey-cock, and walks with a very stately formal pace, making a noise somewhat like that of the turkey. But it is principally remarkable for the thumping noise it makes with it's wings: it will sometimes stand on an old fallen tree, and beginning the strokes very gradually, will repeat them quicker and quicker till they resemble distant thunder, which continues about a minute; and then, after an interval of six or seven minutes, it will renew them. This sound, which may be heard at the distance of half a mile, gives sufficient intimation to fowlers of the place of it's retreat. It exercises this thumping, during the spring and autumn, about ten in the morning and four in the afternoon. It feeds principally on berries and seeds. The female hatches twelve or fourteen eggs at a brood; and protects her young till the succeeding spring.

The Ruffed Heath-Cock is most commonly found in the United States of America, and is there called a pheasant. It shews a peculiar predilection for a kind of ivy-berry, which is deleterious to several other animals. Dr. Brooke of Maryland observes, that it thumps chiefly during the spring, when it's breast swells like that of the pouting pigeon. Lahontan likewise confirms the account of the thumping of this bird in the following words: 'I went in company,' says he, 'with some Canadese, on purpose to see that fowl flap with it's wings: believe me, this sight is one of the greatest curiosities in the world; for it's flapping



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flapping makes a noise much like a drum for about the space of a minute; then the noise ceases for half a quarter of an hour, after which it begins again. By this noise we were directed to the place where the unfortunate bird sat, and found it on a rotten mossy tree. By flapping one wing against the other, it means to call it's mate; and the humming noise which ensues thereon may be heard half a quarter of a league.'

HEATH-CKOCK, BLACK AND SPOTTED. This species is a native of Hudson's Bay. It is larger than the partridge, but smaller than the pheasant. The bill is like that of the hen, of a dark lead-colour; the nostrils are covered with black feathers; the fore-part and under-side of the head are black; and between the angles of the mouth and the eyes there is a white spot, and another behind the eyes. White lines proceed from the corners of the mouth; and, passing under the eyes, tend downwards, and unite under the throat. The top of the head, the neck, back, and coverts of the tail, are variegated with black and dusky brown; as are also the covert-feathers of the wings: the quills of the wings are dusky, edged with brown; and the tail-feathers are black, tipped with orange. The breast and belly are black; the lower belly and thighs are black, mottled with brown and white; the legs are covered down to the feet with slender brown feathers, transversely waved with black lines; and the hinder toe is hid in the feathers.

HEATOTOLT. An American bird, described by Nieremberg, and called by some authors *avis venti*. It is remarkable on account of a very large and round crest of whitish feathers on it's head; it's breast is of a brownish grey colour; it's belly is white; and it's feet are yellow: it's tail, when expanded, is round, variegated with black and white; and it's back and wings are black.

HEDGE-HOG. A genus of animals having five toes on each foot, and the body covered with strong short spines.

HEDGE-HOG, COMMON; the *Erinaceus Europæus* of Linnæus. Though the Hedge-Hog has a very formidable appearance, it is one of the most harmless creatures in the universe. Incapable, or unwilling to offend, all it's precautions are only directed to it's own security; and it is armed with a thousand points, not to invade, but to repel an enemy. While other animals trust to their force, their cunning, or their swiftness, this creature, destitute of all these, has but one expedient for it's safety, from which alone it often finds protection: as soon as it perceives itself attacked, it withdraws all it's vulnerable parts, rolls itself into a kind of ball, and presents nothing but it's spines to the foe; and thus, while it refrains from attempting to injure any other quadruped, it renders itself in a great measure proof against violence.

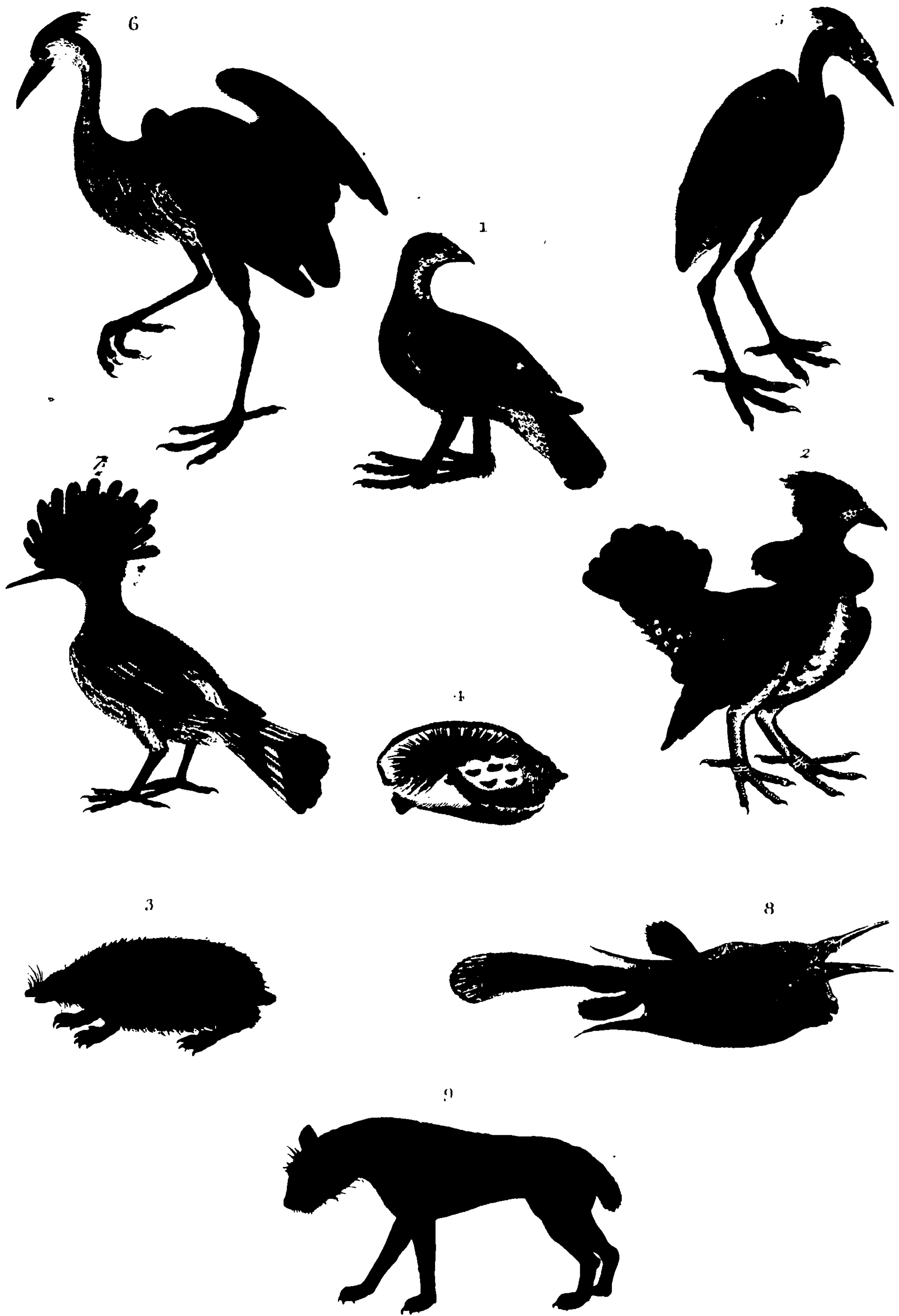
The head, back, and sides, of this animal, are covered with strong sharp spines or prickles; the nose, breast, and belly, are clothed with fine soft hair; the legs are short, almost naked, and of a dusky colour; the ears are broad, round, and naked; the eyes are small, and placed high in the head; the mouth is also small, but well furnished with teeth, serving however only to chew it's food, being of little use either to attack it's enemies or to defend itself. The toes on each foot, which are five in number, are long and serrated; the tail is little more than an inch long, and so concealed by the spines, as scarcely to be visible.

The prickles are about an inch in length, and very sharp-pointed; their points are white, the middle is black, and the lower part is of the same colour with the tips. From the point of the nose to the extremity of the tail, this animal measures about ten inches when extended.

We have already hinted, that the Hedge-Hog, on the smallest appearance of danger, rolls itself up into a lump; and, altering it's whole figure, presents only a roundish mass of prickles impervious on every side. In this form it patiently waits till it's enemies either pass by, or are fatigued with fruitless attempts to annoy it. The cat, the weasel, the ferret, and the martin, soon decline the combat; and even the dog generally makes his attacks in vain. Accumulated danger only increases this animal's precautions to keep on it's guard. In attempting to bite, the assailant more frequently receives than inflicts a wound. The enraged dog may bark, and roll the animal along with his paws; but it still patiently submits to every indignity in order to remain secure. At length the dog, after expressing his chagrin by barking, leaves the inoffensive animal where he found it; which perceiving itself freed from danger, ventures to peep out from it's ball; and, if not interrupted a second time, advances deliberately to it's retreat.

Like most wild animals, the Hedge-Hog spends the greatest part of the day in sleep, and is principally in motion during the night. It generally resides in small thickets, in hedges, or in ditches covered with bushes, making a hole about six or eight inches deep, which it lines with moss, grass, or leaves. It feeds on roots, fruits, worms, and insects; but is falsely charged with sucking cows, and wounding their udders: indeed, the smallness of it's mouth is sufficient to exculpate it from this reproach. It is also said to be very destructive to gardens and orchards, where it will roll itself, according to the opinion of the vulgar, amongst a heap of fruit, and thus carry off a large quantity on it's prickles: but this imputation is as ill-grounded as the former, since it's spines are evidently so disposed, that no fruit would stick on them, even were the experiment attempted. In short, instead of being a noxious animal, and deserving proscription, it seems to be very serviceable in destroying worms and insects, which are so prejudicial to vegetation.

But, as vulgar errors are not easily eradicated, we shall rest our opinion on the evidence of the celebrated M. de Buffon. That naturalist acquits Hedge-Hogs of the charge of being mischievous in gardens; but at the same time accuses them of practices which, from their form and habit, we should be little inclined to suspect. 'I have often,' says he, 'had the female and her young brought me about the beginning of June: they are generally from three to five in number; at first they are white, and only the rudiments of their spines appear. I was willing to rear some of them, and accordingly put the dam and her young into a tub, with abundant provision; but the dam, instead of suckling her young, devoured them all, one after another. On another occasion, a Hedge-Hog that had made it's way into the kitchen, discovered a little pot, in which was some meat prepared for boiling: the mischievous animal drew out the meat, and left it's excrements in the stead. I kept males and females in the same apartment, where they lived together, but never coupled. I permitted several of them to range my garden; they did



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HEATH-CKOCK, BLACK AND SPOTTED. This species is a native of Hudson's Bay. It is larger than the partridge, but smaller than the pheasant. The bill is like that of the hen, of a dark lead-colour; the nostrils are covered with black feathers; the fore-part and under-side of the head are black; and between the angles of the mouth and the eyes there is a white spot, and another behind the eyes. White lines proceed from the corners of the mouth; and, passing under the eyes, tend downwards, and unite under the throat. The top of the head, the neck, back, and coverts of the tail, are variegated with black and dusky brown; as are also the covert-feathers of the wings: the quills of the wings are dusky, edged with brown; and the tail-feathers are black, tipped with orange. The breast and belly are black; the lower belly and thighs are black, mottled with brown and white; the legs are covered down to the feet with slender brown feathers, transversely waved with black lines; and the hinder toe is hid in the feathers.

HEATOTOLT. An American bird, described by Nieremberg, and called by some authors *avis venti*. It is remarkable on account of a very large and round crest of whitish feathers on it's head; it's breast is of a brownish grey colour; it's belly is white; and it's feet are yellow: it's tail, when expanded, is round, variegated with black and white; and it's back and wings are black.

HEDGE-HOG. A genus of animals having five toes on each foot, and the body covered with strong short spines.

HEDGE-HOG, COMMON; the *Erinaceus Europæus* of Linnæus. Though the Hedge-Hog has a very formidable appearance, it is one of the most harmless creatures in the universe. Incapable, or unwilling to offend, all it's precautions are only directed to it's own security; and it is armed with a thousand points, not to invade, but to repel an enemy. While other animals trust to their force, their cunning, or their swiftness, this creature, destitute of all these, has but one expedient for it's safety, from which alone it often finds protection: as soon as it perceives itself attacked, it withdraws all it's vulnerable parts, rolls itself into a kind of ball, and presents nothing but it's spines to the foe; and thus, while it refrains from attempting to injure any other quadruped, it renders itself in a great measure proof against violence.

The head, back, and sides, of this animal, are covered with strong sharp spines or prickles; the nose, breast, and belly, are clothed with fine soft hair; the legs are short, almost naked, and of a dusky colour; the ears are broad, round, and naked; the eyes are small, and placed high in the head; the mouth is also small, but well furnished with teeth, serving however only to chew it's food, being of little use either to attack it's enemies or to defend itself. The toes on each foot, which are five in number, are long and serrated; the tail is little more than an inch long, and so concealed by the spines, as scarcely to be visible.

H E D

The prickles are about an inch in length, and very sharp-pointed; their points are white, the middle is black, and the lower part is of the same colour with the tips. From the point of the nose to the extremity of the tail, this animal measures about ten inches when extended.

We have already hinted, that the Hedge-Hog, on the smallest appearance of danger, rolls itself up into a lump; and, altering it's whole figure, presents only a roundish mass of prickles impervious on every side. In this form it patiently waits till it's enemies either pass by, or are fatigued with fruitless attempts to annoy it. The cat, the weasel, the ferret, and the martin, soon decline the combat; and even the dog generally makes his attacks in vain. Accumulated danger only increases this animal's precautions to keep on it's guard. In attempting to bite, the assailant more frequently receives than inflicts a wound. The enraged dog may bark, and roll the animal along with his paws; but it still patiently submits to every indignity in order to remain secure. At length the dog, after expressing his chagrin by barking, leaves the inoffensive animal where he found it; which perceiving itself freed from danger, ventures to peep out from it's ball; and, if not interrupted a second time, advances deliberately to it's retreat.

Like most wild animals, the Hedge-Hog spends the greatest part of the day in sleep, and is principally in motion during the night. It generally resides in small thickets, in hedges, or in ditches covered with bushes, making a hole about six or eight inches deep, which it lines with moss, grass, or leaves. It feeds on roots, fruits, worms, and insects; but is falsely charged with sucking cows, and wounding their udders: indeed, the smallness of it's mouth is sufficient to exculpate it from this reproach. It is also said to be very destructive to gardens and orchards, where it will roll itself, according to the opinion of the vulgar, amongst a heap of fruit, and thus carry off a large quantity on it's prickles: but this imputation is as ill-grounded as the former, since it's spines are evidently so disposed, that no fruit would stick on them, even were the experiment attempted. In short, instead of being a noxious animal, and deserving proscription, it seems to be very serviceable in destroying worms and insects, which are so prejudicial to vegetation.

But, as vulgar errors are not easily eradicated, we shall rest our opinion on the evidence of the celebrated M. de Buffon. That naturalist acquits Hedge-Hogs of the charge of being mischievous in gardens; but at the same time accuses them of practices which, from their form and habit, we should be little inclined to suspect. 'I have often,' says he, 'had the female and her young brought me about the beginning of June: they are generally from three to five in number; at first they are white, and only the rudiments of their spines appear. I was willing to rear some of them, and accordingly put the dam and her young into a tub, with abundant provision; but the dam, instead of suckling her young, devoured them all, one after another. On another occasion, a Hedge-Hog that had made it's way into the kitchen, discovered a little pot, in which was some meat prepared for boiling: the mischievous animal drew out the meat, and left it's excrements in the stead. I kept males and females in the same apartment, where they lived together, but never coupled. I permitted several of them to range my garden; they did

H E D

did very little damage, and it was scarcely perceptible that they had been there: they lived on the fruits which fell from the trees; they dug the earth into shallow holes; they eat caterpillars, beetles, and worms; and they were also very fond of flesh, which they devoured either boiled or raw.'

These animals, which inhabit Europe and Madagascar, couple in the spring, and bring forth about the beginning of summer. They sleep during the winter; and consequently the stories which have been propagated respecting their providing against that season are certainly false: they are at all times satisfied with a small portion of food; and are capable of subsisting a long time without any aliment whatever. Like all other animals in a dormant state during the winter season, their blood is cold. Their flesh, though generally rejected as unfit for human food, is nevertheless said by some to possess an excellent flavour.

HEDGE-HOG, SIBERIAN; the *Erinaceus Auritus*. This species, which was first described by Dr. Pallas, is common in all the southern deserts from the Dan to the Oby. It is generally much inferior in size to the common kind; but, beyond Baikal, it is found much larger than that species. The ears are large, open, oval and naked, brown round the edges, and internally lined with soft whitish hairs; the upper part of the body is covered with slender brown spines, surrounded at their bases and near their extremities with a ring of white; the limbs and belly are clothed with a most elegant white soft fur; and the tail is extremely short.

These animals, which become extremely fat, sleep during the winter season in holes, each a few inches deep. They feed chiefly on insects; and it has been proved by experiments, that one of them will eat upwards of a hundred cantharides without any sensible injury. They possess all the manners and habits of the common kind; rolling themselves up on the approach of danger, and patiently submitting to insult, provided they can purchase security.

HEDGE-HOG, ASIATIC; the *Tendrac* of Buffon. Like the common Hedge-Hog, this animal is covered with prickles, though mixed in a greater proportion with hair; but it does not defend itself by rolling up into a ball. It has a long slender nose, short round ears, and short legs; the face, throat, belly, buttocks, and legs, are thinly covered with fine whitish hair; and the tail, which is very short, is covered with spines. It is about the size of the mole; and inhabits Madagascar, and several of the oriental isles.

Another variety, described by M. Buffon, and somewhat larger, is armed with spines only on the top and hind-part of the head, the top and sides of the neck, and the shoulders; and the rest of the body is covered with yellow bristles, intermixed with a small quantity of black, which are longer than the others.

These animals, which are only varieties of the same species, have five toes on each foot, and inhabit the same countries. They have grunting voices like hogs, grow extremely fat, and multiply prodigiously. They frequent shallow waters, whether fresh or salt; burrow on the land; and lie torpid six months in the year, during which time their old hair falls off, and is renewed on their revival. Their flesh is soft, stringy, and insipid; nevertheless, the Indians eat it, and even consider it as a peculiar delicacy.

HEDGE-HOG, GUIANA; the *Erinaceus Inauris*

H E L

of Linnæus. This animal has no external ears, but only two orifices which serve as auditory ducts. The head is short and thick; the back and sides are covered with short spines of an ash-colour tinged with yellow; and the face, belly, legs, and tail, are invested with soft whitish hair. The length of this animal is about eight inches; its tail is short; and its claws are long and crooked. It is a native of the country from which it receives its name.

HEDGE-HOG, SEA. This creature is entirely covered with thick thorns or prickles; its body is round; and its eyes and tail are affixed to its belly. Instead of teeth, it is furnished with two small hard stones, an inch broad, with which it crushes sea-crabs, and other shell-fish, on which it subsists. Its prickles, which are as sharp as needles, are either raised or depressed at pleasure. In the middle of the belly there is a sort of bladder, or bag, filled with wind, of which excellent isinglass is made. It swims very slowly; and consequently would be an easy prey for other fish, was it not so completely armed with spines.

There are several species of these animals, differing from each other in size, and in the disposition of their prickles: some are not larger than a foot-ball, and others are as big as a twelve-inch diameter globe. Their flesh is generally reckoned indifferent food, and some species are absolutely poisonous; nevertheless, the Americans often amuse themselves with the barren pleasure of catching these frightful creatures by means of lines and hooks baited with pieces of the sea-crab. The animal approaches the bait with its spines flattened; but, when hooked and stopped by the line, immediately all its spines are erected; its whole body being armed in such a manner, that it is impossible to lay hold of it: for this reason it is dragged to some distance from the water, where it quickly expires.

HEDGE-SPARROW. The English appellation for a species of the *motacilla*. See *SPARROW*, *HEDGE*.

HELEGGUG. A provincial name sometimes used to express the *anas arctica* Clusii, a web-footed fowl common on the British coasts.

HELIOCENTROS. An appellation given by some authors to a poisonous insect, called by Aristotle *phalangium dæcticum*, and by the Latins *solipuga*.

HELIX. A kind of shell-fish, or testaceous animal, always found floating on the water, and distinguished by the epithets of *janthina* and *violacea*. It is about the size of the snail; and is supported on the surface of the water by a small cluster of bubbles filled with air, and a tenacious slimy substance. This animal appears to be oviparous; and these bubbles serve only as a nidus for its eggs. It is probable that it never dives to the bottom, nor voluntarily approaches any shore, the shell being exceedingly thin and brittle. Every shell contains a small quantity of fluid, of the most beautiful red purple colour that can be conceived: this gives a lasting and elegant tinge to linen cloth, and is by many esteemed the *purpura* of the ancients. The *Helix* is found in the Mediterranean.

HELMET PIGEON; the *Columba Galeata* of Moore. This bird receives its name from having its head covered with plumage of a distinct colour from that of the rest of its body, and appearing somewhat like a helmet. It is rather larger

H E N

larger than that Pigeon called the nun: the head, tail, and long feathers of the wings, are always of the same colour, which is either red, black, or yellow; and the rest of the body is entirely white.

HELMET SHELL. A family of Shells, which may be defined as semiglobose, the back being round or convex, and the under or mouth-part flat. Their clavicles or turbans are nearly flat, and always very short. The mouth, which is long and narrow, ends in a sulcus at the top, which turns very large, strong, and crooked, on the back; the lip is strongly serrated, and rises into a high thick border or ledge on the back; and the pillar is generally strongly toothed, and beset with small asperities.

HELOPS. A fish well known to the ancients, and mentioned by many of the classical writers, as well as the naturalists of antiquity. It seems to have been synonymous with their oniscus, and accipescius, which is generally supposed to mean our flurgeon.

HEMATOPUS. An appellation given by Bellonius, and some other authors, to the bird commonly known in England by the name of the sea-pie, the *pica marina* of Ray.

HEMEROBIOUS. A genus of insects of the neuroptera order; the characters of which are these: the mouth is furnished with two tentacula; the wings are deflex without folds; and the antennæ are longer than the thorax, setaceous, and extended. Naturalists enumerate fifteen species. See **CHRYSOPTIS**.

HEMIPTERA. In the Linnæan system, this forms the second order of insects, comprehending twelve genera; namely, the blatta, mantis, gryllus, fulgora, cicada, notonecta, nepa, cimex, aphis, kermes, coccus, and thrips. The characters of this order are these: the mouth is either situated in the breast, or inclined towards it; and the upper wings are semicrustaceous, semimembranaceous, incumbent, and unconnected by a straight longitudinal future, as in the order of coleoptera. The term Hemiptera is derived from Hemisus, Half; and Pteron, a Wing.

HEMISPHERIA. An appellation given by Hill to the genus of flies commonly called the lady-cow or lady-bird; and ranked by Ray and other naturalists among beetles.

HEN. The general name of the female among the winged tribes; but more commonly used to express the female of the gallinaceous kind.

HEN, WATER. A name frequently given to the Moon-Hen, called also the common gallinule. See **GALLINULE**, **COMMON**.

HENBANE LOUSE. An appellation given to a peculiar insect frequently found on the plant from which it receives its name. It is of the order of cimices; its colour is a bright red, spotted with black; it feeds on the juices of the henbane; and it is remarkable that the fetid sap of this plant becomes of an agreeable aromatic flavour in the body of the insect.

These creatures deposit their eggs on the leaves of the henbane about the months of June and July; and in process of time they are hatched into perfect cimices, not into worms. These eggs, which are extremely numerous, yield a fine carnation colour, that seems capable of affording a permanent tinge, by the assistance of alum, and other astringents used in dyeing.

HEN-HARRIER, the *Falco Cyaneus* of Linnæus. This bird, which is properly of the hawk-

H E R

kind, has been supposed by many naturalists to be the male subbuteo; the female of which is so very different, that it has been called by another name, viz. the ring-tail; but this is certainly a vulgar error, the species appearing by incontestible evidence to be distinct.

The Hen-Harrier is smaller than the ring-tail: the head, neck, and back, are dove-coloured; the scapulars are brownish; the rump is somewhat whitish; the breast is a pure white, variegated with transverse brown spots; the wings and tail are a blueish grey, variegated with black; and the legs are yellow, and smaller than is usual in the hawk kind.

This bird flies near the surface of the ground in search of prey; and is extremely destructive to young poultry and the feathered game. It breeds on the ground; and has never been observed to settle on trees.

HENOTHRIX. The name of a fly of the seticauda or hair-tailed kind; distinguished from the other species by having only one hair, and hence by some called uniseta. The whole body is black, except the middle of the back and belly, which are red; the wings are silvery; and the antennæ are small and black. It is very common in the warm climates; and is usually found on the ammi, or bishop's weed.

HEPATUS. A marine fish common in the Mediterranean, remarkable for its liver-colour, from whence it receives its name. Its figure is broad and flat; it has very prominent eyes; and a remarkably broad tail, near the basis of which there is a large black spot. Its teeth are large, round, and somewhat pointed; and it has only one dorsal fin, the anterior rays of which are prickly, and the posterior soft.

In the Artedean system, this fish is a species of the labrus; and distinguished by the appellation of the labrus with the lower jaw longer than the upper, a forked tail, and black transverse lines on the sides.

HEPSETUS. An appellation given to a small sea-fish, called also anguilla and atherina. It is long, slender, and almost pellucid; the back is variegated with black spots; and the tail is bifid. It is caught on the shores of the Mediterranean, and some other seas. Its flesh is reckoned extremely delicate; but being full of bones, is not much esteemed.

HERBIVOROUS. An epithet given to such creatures as feed only on vegetables, in contradistinction to those which are carnivorous, or feed on flesh.

HERMAPHRODITE. An appellation used to express persons or animals which are furnished with the genital members both of the male and female sexes. Some naturalists and anatomists have expressly denied that there are any of the human race which answer this description; but certain it is, that many of the insect and reptile tribes are really Hermaphrodites.

In the Memoirs of the French Academy we meet with an account of a very extraordinary kind of Hermaphrodites, which not only partake of both sexes, but also perform the offices of both at the same time. Of this class are earth-worms, land-snails, fresh-water snails, and leeches.

The method of copulation practised among these creatures may be illustrated in the instance of earth worms. These little animals creep, two by two, out of their holes; and dispose their bodies

HER

in such a manner, that the head of the one is turned to the tail of the other. Being thus extended, a little conical button, or papilla, is protruded by each, and received into the aperture of the other.

HERMIT. An animal of the lobster kind, having rough claws, the right being the longest; with the legs subulated, and serrated on the upper ridge; and the tail naked, tender, and furnished with a hook, by which it secures itself in its adopted habitation.

This species inhabits the empty cavities of turbinated shells, changing its lodgings, according to its increase of growth, from the small nerite to the large whelk. Nature has denied it the strong covering behind, which she has bestowed on others of this class; and therefore seems to direct it for refuge to the deserted cases of other animals.

Aristotle describes this animal under the name of the karkinion: the moderns call it the soldier, from the idea of its dwelling in a tent; and the Hermit, from its retiring into a shell. See **CRAB, SOLDIER.**

HERON. In the Linnæan system, the Heron forms a genus of the order of grallæ; the distinguishing characters of which are these: a long straight, pointed bill, with furrows from the nostrils to the extremity; a linear nostril; and feet having four toes. To this genus belong the ardeola, bittern, cocoi, crane, the gaza giovani or small white Heron, the gaza or greater white Heron, the foco, the night-raven, the stork, and several others.

Though birds of the crane, the stork, and the Heron kind, have a strong affinity to each other, the Heron may be distinguished from them, not only by its size, which is much less, but by its bill, which is much longer in proportion; and particularly by the middle claw on each foot, which is serrated, for the better seizing and securing its slippery prey. There is also an anatomical distinction in which Herons differ from all other birds, viz. that they have but one cæcum, while all other birds are furnished with two.

Brisson has enumerated no fewer than forty-seven species of this tribe, all differing in figure, size, and plumage; but they all seem possessed of the same manners; and merit one general character of cowardice, rapacity, indolence, and yet insatiable hunger. Other birds become fat by an abundant supply of food; but Herons, though excessively voracious and destructive, are ever lean and craving.

HERON, COMMON; the *Ardea Cinerea* of Linnæus. This bird is remarkably light in proportion to its bulk, scarcely weighing three pounds and a half, though its length is upwards of three feet, and its breadth nearly five. The body is very small, and the skin remarkably thin; the bill is six inches long, very strong and pointed, the edges being thin and rough, the colour dusky above, and yellow beneath; the irides are of a deep yellow hue; and the orbits, as well as the space between them and the bill, are covered with a naked greenish skin. The forehead and the crown are white; the hind-part of the head is adorned with a loose pendent crest of long black waving feathers; the upper part of the neck is pure white, and the coverts of the wings are light grey. The back is clothed only with down, covered with the scapulars; the fore-part of the neck is white spotted with a double row of black, the plumage being long, narrow, unwebbed, and

HER

falling loosely over the breast; and the scapulars, which are of the same texture, are grey streaked with white. The ridges of the wings are white; the primaries and the bastard-wing are black; and the breast, belly, and thighs, are white, the last being somewhat dashed with yellow. The tail is composed of twelve short cinereous feathers; the legs are of a dirty green colour; the toes are long; and the inner edge of the middle claw is finely serrated.

The female is destitute of the long crest of the male, having only a short plume of dusky feathers; the head is grey; the feathers above the breast are short; the scapulars are grey, and webbed; and the sides are also grey. From the variations of colours between this bird and the male, she has generally been supposed to be of a different species; but Pennant, and all the most accurate naturalists of modern times, consider them as the same.

Though the general appearance of the Heron might naturally enough excite an idea of its being fitted for a state of warfare, it is nevertheless so very cowardly, as to fly at the approach of a sparrow-hawk. In ancient times, one of the amusements of the great consisted in pursuing this timorous creature with the falcon: and Heron-hawking was once so much admired, that laws were enacted for the preservation of the species; those who destroyed their eggs being subjected to a penalty of twenty shillings for every offence. At present, however, the effects of the ill-judged policy of our ancestors are felt by their posterity; for, as the amusement of hawking is no longer pursued, and stocking fish-ponds has become fashionable, the Heron may be regarded as a destructive and formidable creature: it commits the greatest devastations in fresh waters of all other birds; and there is scarcely a fish that it will not strike at and wound, though unable to carry it away. But the smaller fry constitute its principal subsistence: these, being pursued by their larger fellows of the deep, seek for refuge in shallow water, where they find the Heron a still more fatal enemy.

The Heron wades into the water as far as possible, and there patiently waits the approach of its prey; which no sooner appears, than it darts on it with unerring and inevitable aim; and after this manner it will sometimes destroy more fishes in one week than perhaps any other bird in some months. 'I have seen a Heron,' says Willughby, 'which had been shot, that had seventeen carps in his belly at once, which he will digest in seven or eight hours, and then to fishing again. I have seen a carp,' continues he, 'taken out of a Heron's belly, nine inches and a half long. Several gentlemen who kept tame Herons, in order to prove what quantities one of them would eat in a day, have put several smaller roach and dace into a tub; and they have found him eat fifty in a day, one day with another. In this manner, a single Heron will often destroy fifteen thousand carp in a single half year.'

Such are the rapacious powers of this tyrant of the fresh-waters. In general he is seen taking his gloomy stand by the side of a lake, as if meditating mischief, motionless, and gorged with plunder. His usual attitude on such occasions is that of sinking his long neck between his shoulders, and keeping his head turned on one side, as if viewing the pool more intently. When the call of hunger returns, the toil of an hour or two is generally sufficient to fill his capacious stomach; and he retires long

HER

long before night to his lodging in some wood, which he quits early the ensuing morning, in order to pursue his usual occupation.

But though the Heron generally finds a plentiful supply of food in open and favourable weather, in cold and stormy seasons his prey is no longer within reach, the fish then abiding in the deep as their warmest situation: frogs and lizards also seldom venturing from their retreats during the continuance of such weather, the Heron is obliged to practise abstinence, and to feed on such weeds as the margin of the lake affords. Under such circumstances, he contracts a consumptive disposition, which succeeding plenty is incapable of removing; so that the meagre glutton divides his time between want and riot, alternately feeling the extremes of each: hence, notwithstanding the labour with which he catches his prey, and the amazing quantity he devours, he is always lean and emaciated.

As the Heron is destructive to newly-stocked ponds almost beyond credibility, various modes of retaliation have been adopted. Willughby gives the subsequent receipt for catching him. 'Having found his haunt, get three or four small roach or dace; and having provided a strong hook with a wire to it, this is drawn just within the skin of the fish, beginning without-side the gills, and running it to the tail, by which the fish will not be killed, but continue alive for five or six days. Then having a strong line made of silk and wire, about two yards and a half long, it is tied to a stone at one end, the fish with the hook being suffered to swim about at the other: this being properly disposed in shallow water, the Heron will seize on the fish to its own destruction. From this method we may learn, that the fish must be alive, otherwise the Heron will not touch it; and that this bird, as well as all those that feed on fish, must be their own caterers; for they will not prey on such fish as die naturally, or are killed by others.'

Though the Heron lives chiefly in the vicinity of pools and marshes, it sometimes builds its nest on the tops of the highest trees, and on cliffs impending the sea, composed of sticks, lined with wool; and the female lays four large eggs of a pale green colour. Such, however, is the natural indolence of this bird, that it never is at the pains of building a nest for itself, if it can procure one deserted either by the owl or the crow: indeed, it usually enlarges it, and lines it internally; and, should the original possessor happen to renew his claim, the usurper never fails to assume courage sufficient to repel the attack.

The French seem to have availed themselves of the indolence of these birds in fabricating their nests; and they actually provide places fitted with proper materials for their nestling, which they term heronries. In France Herons are deemed proper for the table, and the flesh of the young ones in particular is held in very high estimation. In order to obtain it, the natives erect high sheds along some stream abounding with fish; and having furnished them with fit substances for the Herons to nestle, these birds build and breed there in great abundance. As soon as the young are supposed to be of a proper size, the owner of the heronry carries off such of them as he thinks proper, and sells them to the neighbouring gentry at a pretty high price.

The flesh of Herons was anciently a favourite

HER

dish in England, and was even thought a delicacy fit for a monarch; but as modern times have varied tastes as well as manners, Herons in general now remain unmolested either by the fowler or the epicure. Their nests are often found in great numbers in the midst of extensive forests and groves, where they have long been accustomed to find protection. They seem fond of society; and, like rooks, build their nests contiguous to those of fowls of their kind.

No sooner are the young Herons excluded, than they become voracious and importunate: the old ones are perpetually on the wing to supply them with abundance of food; and the quantity, as well as the size of the fish they take on such occasions, are equally surprizing. By a cruel artifice of sewing up the vents of young Herons, (which increases their screamings, while it renders them incapable of partaking of the prey so liberally provided for them) some persons have found means to procure a considerable quantity of fish for several days together, by plundering their nests; till the old ones, tired out with an importunity which they could not gratify, have deserted their young, and left them to their fate.

The Heron is said to be a very long-lived bird: according to Keyser's account, it may sometimes exceed the age of sixty years; and, by a recent instance of one caught in Holland, its longevity is again confirmed, the bird having a silver plate fastened to one leg, importing, that it had been struck for the elector of Cologne's hawks thirty-five years before.

HERON, GREAT WHITE. The length of this bird, from the tip of the bill to the end of the claws, is four feet and a half, and to the end of the tail three feet and a quarter; the expansion of the wings is nearly five feet and a half; and the weight is about two pounds and a half. This bird being entirely white, may thereby be distinguished from the common Heron; it may also be known by its inferior size, the length of its tail, and its being destitute of a crest. It is seldom seen in England.

There is another variety, called the lesser white Heron, which only differs from the preceding in size, and in being adorned with a crest. A third variety is still smaller: the top of the head and the neck are of a saffron colour, as well as part of the breast; but the rest of the body is white.

HERON, LITTLE WHITE, OF CATESBY. The body of this species is entirely white; the bill is red, and a little crooked; the irides are yellow; and the feet are green.

HERON, RED-LEGGED. This bird is generally supposed to be the least of the kind. The neck is short; the body is entirely of a saffron colour, inclining to chestnut, deeper underneath, and fainter above; the tail is so very small, as to be scarcely perceptible; the bill is of a blueish green hue near the head, but black towards the extremity; and the legs and feet are a deep red.

HERON, ASH-COLOURED, NORTH AMERICAN. This species, which is somewhat larger than the common Heron, differs from it in having a brown back, in wanting the white feathers on the forehead, and the black spots on the sides below the bottom of the neck. The bill is straight, sharp-pointed, six inches long, and serrated both above and below towards the extremity; the upper chap is channelled and black; and the nostrils are placed pretty near the head. Between the nostrils and the eyes the skin is naked, and of a greenish yellow hue;

HER

hue; the lower chap is orange-coloured; and the top of the head is covered with long black feathers, forming a pendent crest. The sides and upper part of the head are white; the neck is covered with long, brown, slender feathers, transversely barred with dusky on the hinder part; the back, and the upper sides of the wings and tail, are of a brownish ash-colour; and the skin which connects the joints of the wings is covered with dusky feathers tipped with red. The breast is white, sprinkled with long black spots, mixed with a little reddish brown; the thighs are of a reddish brown colour; the belly is white; the back is invested with a cinereous down, concealed by the long feathers springing from the shoulders; the legs are covered with dusky scales; the claws are black; and the outer toes are joined to the middle ones, towards their bases, by a thin web.

HERON, YELLOWISH ASH-COLOURED, OF MARSEILLES. This species resembles the common Heron in shape; but its colours are different, and it is destitute of a crest. The bill and the head are very long; the neck is cinereous; the belly is ash-coloured, and several black and brown lines run between it and the throat; the upper part of the tail and back are red; the prime-feathers of the wings are black; and the coverts are of a deep yellow hue.

HERON, YELLOW AND GREEN. The bill of this species is three inches long, black above, and yellow underneath; the irides, as well as part of the neck down to the chin, are white; but the remainder of the neck, the top of the head, the breast, and the belly, are variegated with brown lines; and the back is black. The wings are yellowish with black spots; the tail-feathers, which are short and white, exhibit the appearance of hair; the thighs are cinereous; the feet are black; and the claws are yellow at their extremities. This bird is a native of France, and some other continental countries.

HERON, BRAZILIAN, WITH A SERRATED BILL. This bird is somewhat larger than the duck: the fore-part of the bill, both above and below, is double notched; the irides are of a gold colour; and all the upper part of the head and neck has pretty long feathers, of a pale yellow hue, mottled with black. The lower part of the neck, the breast, and the lower belly, are covered with white feathers waved with brown; but the back and wings are brown undulated with yellow. The prime-feathers of the wings have an equal mixture of black and ash-colour; and the tail-feathers are transversely barred with white lines.

HERON, BLACK, OF ALDROVANDUS. The neck of this bird is considerably shorter than that of the common Heron; the colour is every where uniform, being blackish, except on the neck, where it is encompassed with a white ring; and the bill is yellow, with a black spot at the end of the upper and lower mandible.

HERON, CRAB. This bird, which is common in the Caribbee Islands, receives its name from feeding usually on crabs. Of this species there are two varieties. The first differs very little from the European Heron, except that it has four large yellow spots on the skin of the belly, and an equal number on the thighs: these spots, which are bitter as gall, must be carefully extracted after the bird is killed, otherwise they impart a very disagreeable bitterness to the flesh, which, when properly dressed, is esteemed pretty good.

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The other variety of the Crab Heron is very beautiful. The body is of a larger make than that of other birds of the same genus, and yet the neck is three inches longer than the whole body. The wings are of an equal length with the tail; and the legs are long, slender, and greenish. The head is black; and on its top there is a beautiful tuft of blueish feathers, below which there are two pendent plumes of fine slender slate-coloured feathers about nine inches in length: the eyes, which are large and bright, are surrounded with a gold-coloured circle; on the lower part of the neck there are five or six elegant white plumes, which are extremely valued by the natives of the Caribbees, especially as they are only found on old birds. The whole back is covered with elegant blueish feathers; and the plumage of the wings is of the same colour.

HERON, BLUEISH BLACK. This bird, which is sometimes called the black and blue gaulding, is about eighteen inches long; the bill, which measures two inches and a half, is covered near the base with a green skin, but the rest is blueish; on the top of the head there is a crest of long blueish black feathers; of which colour likewise is the whole body, except the breast and belly, which are lighter; and the legs, which are seven inches long, are covered with greenish scales.

HERON, BLUE. This species is about the size of the common Heron; its length, from the tip of the bill to the end of the toes, is three feet; and its weight is nearly three pounds. The bill is wholly black, slightly incurved downwards, and hooked at the point; the head is adorned with a beautiful crest of sky-blue plumes; but the sides of the head from the bill, and the under-part next the eyes, are white. The covert and scapular feathers of the wings are of a pale blue colour, but the quill-feathers are black with blue edges. The rest of the body is of a blueish lead-colour; the feet are yellowish, with very long toes; the middle claw is serrated; and the exterior toes are connected to the middle by a membrane.

HERRING. The Herring is a species of the clupea. Its distinguishing characters are; that there are eight branchiostegous rays; and that the belly is extremely sharp, and frequently serrated.

Herrings differ greatly in size; but their usual length is from nine to twelve inches. The back and sides are green varied with blue, and the belly is silvery; a scaly line runs along the belly from the head to the tail; the scales, which are large and thin, easily fall off; the eyes are very large; the edges of the upper jaw, and the tongue, are very rough, but the mouth is destitute of teeth. The gill-covers are extremely loose and patulous, which occasions the immediate death of the fish when taken out of its native element; and hence the well known proverb, 'As dead as a Herring.' The dorsal fin consists of seventeen rays; the two ventral fins have nine, the pectoral seventeen, and the anal fourteen. The tail is extremely forked; the lateral line is hid beneath the scales; and the sides are compressed.

Herrings are found in the greatest abundance in the higher northern latitudes. In those un navigable seas which are covered with ice for a great part of the year, they find a quiet and safe retreat from all their numerous enemies: that is, neither man, nor their still more destructive enemy the lobster, nor the voracious eels, dare to pursue them. The quantity of inferior food which those seas sup-

ply is amazing; which, added to the security of these fishes under the icy rigour of the climate, render their increase great beyond expression; and from these retreats some authors are of opinion they would never depart, did not their numbers render it necessary for them to migrate in quest of food congenial to their appetites.

The great colony of Herrings sets out from the icy seas about the middle of winter: it is composed of vast numbers, even beyond conception; but no sooner is it in motion, than millions of enemies appear to thin the squadrons. The fin-fish and the cachalot swallow hundreds at a yawn; the porpus, the grampus, the shark, and all the numerous tribes of dog-fish, find them an easy prey; and, desisting from mutual carnage, unite in devouring these defenceless animals: while the myriads of sea-fowl that frequent the polar regions watch the progress of their migration, and are nearly as fatal to them as their enemies of the deep.

Thus surrounded with foes which they can neither avoid nor repel, these helpless emigrants find no other safety but that of crowding closer together, and leaving the extreme ranks to be first destroyed. However, they soon separate into shoals, one body of which moves westward, and pours down along the coasts of America as far as Carolina. In Chesapeak Bay, the annual inundation of these fishes is so great, that they cover the shores in such quantities as to become a nuisance. Those which hold more to the eastward, and direct their course for Europe, endeavour to save themselves from their unrelenting pursuers by approaching the first shore they can find; and accordingly make their descent on Iceland about the beginning of March. When they arrive on that coast, their phalanx, though it has suffered considerable diminutions, is nevertheless of amazing extent, depth, and closeness, covering a space as large as the island itself; the whole element seems as it were alive, and the numbers appear inexhaustible.

That shoal which visits the British coasts, begins to appear off the Shetland Isles in the month of April. This is the forerunner of the grand shoal which descends in June, whose appearance is announced by the numbers of its voracious attendants, the gannet, the gull, the shark, and the porpus. When the main body is arrived, its breadth and depth is such as to alter the very appearance of the ocean. It is divided into distinct columns of five or six miles in length, and three or four in breadth; while the water curls up as the Herrings advance, and appears as if forced from its bed. Sometimes they sink for the space of ten or fifteen minutes, then rise again to the surface; and, in bright weather, reflect a variety of splendid colours, like a field bespangled with azure, gold, and purple.

From the Shetland Isles, where this great army divides, one body moves off to the western coasts of Ireland, where it meets with a necessity of dividing a second time: one party taking to the Atlantic, is soon lost in that extensive ocean; the other passing into the Irish Sea, furnishes a very considerable capture to the natives. The second grand division, which takes place at Shetland, visits the northern shores of this island; and then entering the British Channel, passes the Land's End, and soon after totally disappears.

Thus the Herrings, expelled from their native seas, seek those bays and shores where food presents itself in greatest plenty, and where they are

the least liable to meet with their cruel pursuers of the deep. In general, the larger rapacious animals of the ocean avoid the more populous shores; and these are chosen by Herrings as an asylum from more imminent danger. Thus, along the British coasts, and those of Norway, Germany, and France, they are found punctual in their visitations: nevertheless, they are sometimes capricious in their migrations; and have been known to frequent particular shores for a series of years, and then to relinquish them for ever.

Towards the end of June, Herrings are in full roe; and they continue in perfection till the beginning of winter. The young ones approach the shores in the months of July and August, and are then from half an inch to two inches in length. Few young Herrings being found in our seas during winter, it is generally supposed that they return to their native haunts beneath the ice, in order to repair the vast destruction of their race in the summer. Some old ones continue on our coasts the whole year, but their number is very inconsiderable.

The Herring-fishery is of very remote antiquity. The Dutch, remarkable for their persevering industry, first engaged in it about the year 1164: they kept possession of it for several centuries; but at length its value became so well known, that it gave rise to several obstinate contests between them and the English. Still, however, either from some defect in our government, or the mode of conducting our fisheries, the Dutch maintain a decided superiority over us in this lucrative branch of trade.

Our great stations are off the Shetland and Western Isles; and on the Norfolk coast, in which the Dutch also participate. Yarmouth has long been famous for its Herring-fair, which was regulated by act of parliament in the reign of Edward III. That town is obliged by its charter to send to the sheriffs of Norwich one hundred Herrings, to be made into twenty-four pies, by them to be delivered to the lord of the manor of East Carleton, who is to convey them to the king; and hence the facetious Dr. Fuller calls the Herring a Norfolk capon.

Immense quantities of Herrings are annually caught on the British coasts; many of which are consumed while fresh; and the rest are either salted, pickled, or smoke-dried, and exported to various parts of Europe.

Considered as an aliment, fresh Herrings are perfectly innocent if moderately used; but, when taken in quantities disproportioned to the digestive powers, they frequently produce a putrefaction in the stomach of the alkaline kind, and are otherwise attended with very pernicious consequences. Pickled Herrings are always unwholesome food, their flesh being rendered hard, and scarcely digestible by the vital powers: these, however, are less injurious than such as are salted and dried; the last being more hardened, and consequently less easy of digestion.

Viewed in a medicinal light, the Herring is said to be of considerable importance. The vesicles called anima, taken internally, are said to be diuretic. Salted Herrings are sometimes applied to the soles of the feet in fevers, with intent to draw the humours from the head, and to mitigate the febrile heat. Herring pickle is used in clysters for the dropsy, and pains in the hips, and, externally applied, it mundifies fetid ulcers, checks

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the progress of gangrenes, and dissipates strumous swellings. It is also said to be beneficial in the quinsy, if the parts affected are anointed with a mixture of this and honey.

The Dutch Herring-fishery commences on the fourteenth of June, in which no less than a thousand vessels are employed: these, which are called *busses*, carry from forty-five to fifty tons, besides two or three small cannon. None of them are allowed to quit their ports without a convoy, unless they carry twenty pieces of cannon collectively, in which case they are permitted to sail in company. Before they proceed on their voyage, the owners make a verbal agreement, which carries in it all the force and authority of the most solemn compact. The regulations of the admiralty of Holland, with a few variations, are followed by the French and other nations: the principal of which are; that no fisher shall cast his net within one hundred fathoms of another's boat; that while the nets are cast, a light shall be kept on the hind-part of each vessel; that when a boat is obliged by any accident to desist from fishing, the light shall be cast into the sea; and likewise, that when the majority of the fleet leaves off fishing, the rest shall be obliged to do the same.

From the middle of September to the middle of October is the most successful period for fishing on the Norfolk and Suffolk coasts. The nets which are used for Herrings are about five yards deep, and twenty-five long; and sometimes such numbers of them are united, that they will take in a mile in compass. The fishermen are directed to those spots where the Herrings are most numerous by the hoverings and motions of the sea-birds, which continually pursue them in expectation of prey. As the fishermen row gently along, they let their nets fall into the sea, steering their course, as nearly as they are able, against the tide; so that, when they draw them, they may have the assistance of the tide. As soon as any boat has procured a lading, it makes to the shore, and delivers the fish to those persons who are appointed to wash and gut them. They distinguish their Herrings into six different sorts: the Fat Herring, which is the largest and thickest of all, and will keep about two or three months; the Meat-Herring, which is likewise large, but less fat and thick than the former; the Night-Herring, which is of a middling size; the Pluck, which has been somewhat damaged in catching; the Shotten Herring, which has lost its spawn, or milt; and the Copsen, which by some accident or other has been deprived of its head.

All these kinds of Herrings are deposited in a tub with salt or brine, where they are permitted to lie for twenty-four hours: they are then taken out, put into wicker-baskets, and washed, after which, they are fixed on small wooden spits, and hung up in chimnies built for that purpose, at such distances that the smoke may have free access to them all. When these places, which will contain ten or twelve thousand fish, are filled, a quantity of billets is laid on the floor, and set fire to, in order to dry them; and the doors and air holes being closely shut, the whole place is immediately filled with smoke. This operation is repeated every quarter of an hour: so that a single barrel of Herring's requires five hundred billets to dry them. A stall consists of ten barrels, and each barrel contains about a thousand Herrings, which, when thus prepared and dried, receive the appellation of Red Herrings.

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The Dutch are most expert in pickling these fish; and for that purpose they take them about the middle of summer. Their usual method of procedure is as follows: As soon as the Herrings are liberated from the nets, they are gutted and washed; then they are put into strong brine, made of water and sea-salt, for fifteen hours; after which they are taken out, well drained, and regularly disposed into barrels, with a layer of salt at the bottom of each, and another at the top. Care is likewise taken that no air be admitted, nor the brine suffered to leak; either of which would be injurious to the preservation of the fish.

HERRING GULL; the *Larus Fuscus* of Linnæus. A bird of the *larus* kind, about the size of the duck, remarkable for its voraciousness, and particularly for devouring vast numbers of Herrings. See **GULL**, **HERRING**.

HIATICULA. See **LARK**, **SEA**.

HIATULA. An appellation given by some naturalists to the fish more usually called the channa.

HIATULA is also a name by which Gaza and some others have called the chama, a genus of shell-fish distinguished from other kinds by always keeping its shell in some measure open; and, in many species, it is incapable of shutting it entirely.

HICKWALL. A small species of woodpecker, called by authors *picus varius minor*: it weighs about an ounce; and its colours are a beautiful variegation of black, white, and brown. The male has a red spot on the crown of the head, and the female a red one; which marks sufficiently distinguish the sexes.

HIMANTOPUS. An aquatic bird constituting a species of *charadrius* in the Linnæan system, very remarkable for the length and slenderness of its legs. The breast, belly, and throat, are entirely white; the back, wings, and beak, are blackish; the tail is of a whitish grey colour; the neck is marked with several oblong black spots drawn downwards; and the legs and feet are red.

HIND. A female stag of the third year. See **DEER**.

HIPPELAPHUS. An animal of the deer kind, said to be found in some parts of Norway. It is about the size of the elk; and, with respect to shape, partakes both of the horse and the stag. The chin and throat are furnished with a kind of beard; the body is well compacted; the legs are long and slender; and the tail is very short. This animal has a mane like that of the horse; a prolongation of which is perceptible from the shoulders to the tail along the dorsal spine.

HIPPO. A species of coluber; the scuta of whose abdomen are a hundred and sixty, and the squamæ of the tail a hundred.

HIPPOBOSCOS. The name given by naturalists to the horse-fly, and forming a genus of the diptera class of insects in the Linnæan system. The *Hippoboscus* is about the size of the common fly; its body is broad, flat, smooth, and of such a firm texture, that it is with difficulty crushed or broken by the fingers. It is remarkable for the obliquity of its flight.

HIPPOCAMPUS. This creature, which is usually caught in the Mediterranean, is a species of the *syngnathus* in the Linnæan system. Its name is derived from *Ippos*, a Horse, and *Kampos*, a Caterpillar, its head resembling a horse, and the rest of its body a caterpillar.

The *Hippocampus* is frequently caught about three inches in length, it is as thick as the fore-

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finger; the snout, which is long and tubular, is furnished with an operculum below, which opens or shuts at the pleasure of the animal; the eyes are round and prominent, and between them there are two prominent tubercles. The body, down to the anus, is heptahedral, and terminated at the angles by a sort of thorny protuberances; from the anus to the tail the shape is only three or four-sided, and terminates in a point twisted into a sort of spiral line. It has two auriform gills; above which there are two apertures opening upwards. This creature has likewise two apertures on the belly, one of which serves for an excretory duct, and by the other the female deposits her eggs. The whole body is composed of a sort of annular cartilages, from distinct parts of which are propagated a kind of prickles. While fresh, the colour is a dusky green, blackish towards the tail, and spotted on the belly with blueish white specks; and a single fin runs along the back, of an equal height from it's rise to it's termination. Some varieties of this species have a mane, but in general they are destitute of this character. However, animals of this kind are hairy in many parts of the body, and particularly about the head; but the hairs quickly fall off in drying.

HIPPOGLOSSUS. In the Linnæan system, the Hippoglossus is a species of the pleuronectes; and is known in England by the name of the holibut. See **HOLIBUT**.

HIPPOPOTAMUS; the Sea, or River-horse. In the Linnæan distribution, this creature forms a distinct genus of animals of the order of belluæ, in the class of mammalia; the characters of which are: that there are two paps situated in the groin; that the dentes incisores are six above and four below, the upper ones being placed at distances by pairs, and the lower ones prominent; that the dentes canini are single, appearing as if obliquely cut off; and that the feet are hooped at their margins.

The Hippopotamus is as large and formidable as the rhinoceros; and, in magnitude, inferior only to the elephant. The male has been found to measure seventeen feet in length, from the extremity of the snout to the insertion of the tail; the circumference of the body is fifteen feet, and the height nearly seven; the legs are three feet long, and the head almost four: the head, indeed, is of an enormous size; and the very jaws extend upwards of two feet. The ears, which are small and pointed, are internally lined with fine short hair; the lips are beset with strong hairs scattered in bunches; and the body, which is of a lightish colour, is thinly covered with hair, at first sight scarcely perceptible.

Some writers have erroneously given this animal a mane: however, the hair on that part being somewhat thicker than on the rest of the body, that circumstance probably gave rise to the mistake. The skin is very thick and strong; and though incapable of resisting a musquet-ball, is nevertheless impenetrable to the stroke of a sabre. The tail is about a foot long, flat, and pointed; the hoofs are divided into four parts, and in some measure resemble those of the elephant; but though the Hippopotamus is an amphibious animal, they are unconnected with membranes. The whole figure of this creature is something between that of the ox and the hog, and it's voice bears some resemblance to the bellowing of the one and the grunting of the other.

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Though the Hippopotamus seems well adapted by nature for a state of hostility, it is but little disposed to exert it's prodigious strength against an equal adversary. It chiefly resides at the bottoms of the great rivers and lakes of Africa, from the Niger to the Cape of Good Hope: it is found in none of the African rivers which empty themselves into the Mediterranean except the Nile, and even there only in Upper Egypt, and in the lakes and fens of Ethiopia through which that mighty river devolves it's stream. In these situations it leads an indolent kind of life, seldom appearing disposed for action, except when prompted by the calls of hunger. It pursues it's prey in the water with great swiftness and perseverance; and is capable of continuing at the bottom for the space of half an hour, without ever rising to the surface for respiration. It traverses the bed of the stream with the same facility as if it were walking on land; and makes terrible devastation in those places where prey offers itself in abundance: but, when fishy aliment begins to fail, it is compelled to exchange it's aquatic retreats for the land, where it moves along very awkwardly and slowly. If it cannot procure food on the margin of the river, it reluctantly ascends the higher grounds, where it commits dreadful havock on the sugar-canes and plantations of rice and millet; and also feeds on the roots of trees, which it loosens with it's vast tusks.

When the hapless natives behold their possessions thus destroyed by this animal, they beat drums, light fires, and raise a hideous outcry, in order to frighten it back to it's native element; and as the creature is extremely timorous on land, these stratagems generally prove successful: but, if ever it happens to be wounded, or too much irritated, it then becomes formidable to all that oppose it; overturning every thing that comes in it's way, and appearing possessed of amazing strength. When pursued, it takes to the water, and sinks to the bottom; but frequently rising again to the surface, with it's head in view, bellows in the most hideous manner. When wounded, it sometimes attacks boats or canoes with great fury, and often sinks them by biting large pieces out of their sides; for the Hippopotamus is not less resolute in the water than timid on the land. However, the principle of self-preservation alone seems to actuate this creature's rage: if unmolested, it never attacks the mariners nor their boats; but, should an affront, either intended or accidental, be offered to it, it's revenge is instantaneous, and often fatal. 'I have seen,' says a certain mariner, 'one of these animals open it's jaws; and, seizing a boat between it's teeth, at once bite and sink it to the bottom. I have seen it, on another occasion, place itself under one of our boats, and rising under it, overset it with six men in it, who however happily received no other injury.'

Such then is the prodigious strength of the Hippopotamus; and from hence, probably, fancy has been inclined to match it in combat against other animals more fierce and equally formidable. The crocodile and the shark have been said to enter the lists against it, and to yield it an easy victory; but as the shark is only found at sea, and the Hippopotamus never ventures beyond the mouths of fresh-water rivers, it is most probable that these engagements never existed but in the imagination. It sometimes happens indeed, that the African princes amuse themselves with combats on their lakes, between this and other formidable animals.

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but whether the rhinoceros or the crocodile are among the number, we are not competent to ascertain. The negroes venture to attack the shark and the crocodile in their native element, and frequently destroy them; but so sensible are they of the superior powers of the Hippopotamus, that they seldom even dare to provoke it.

As the Hippopotamus feeds on fish and vegetables, so it is highly probable that the flesh of terrestrial animals is equally grateful to it. The natives of Africa assert, that it sometimes devours children, and other creatures which it is able to surprize by land; but as it's motions are extremely slow, animals in general are endued with sufficient powers for escape.

A herd of females has but a single male. The female always brings forth her young on the land, and seldom produces more than one at a time: at such seasons she is extremely timorous; and no sooner hears the slightest noise, than she dashes into the stream, and is immediately followed by her offspring.

These animals are capable of being tamed; and Belon says he has seen one so gentle, as to be let loose out of a stable, and fed by it's keeper, without attempting any mischief. In some places they are taken by means of pitfalls; in others, the natives place boards, stuck full of sharp pieces of iron, in the corn-grounds, which wounding their feet, render them an easy prey.

The young ones are said to be excellent food; and the negroes, who are in general not very delicate in the choice of their viands, evidence an equal partiality for the old. Dr. Pococke informs us, that he has seen their flesh exposed to sale in the shambles; and we are told that the breast in particular is not less delicate than veal. The teeth of these animals are harder than ivory, and not so liable to turn yellow; and their skins, which when dried are almost impenetrable, are fabricated into bucklers.

This animal, which seems to be the behemoth mentioned in the book of Job, was certainly known among the Romans; for Augustus is said to have exhibited one on the occasion of his triumph over Cleopatra.

HIPPOTAURUS. The name of a creature said to be generated between the bull and the mare. Unnatural as this connection may seem, Wagner, in his History of Switzerland, assures us, that the animal produced by this intercourse is sometimes found wild in the mountainous parts of that country.

HIPPURIS. An appellation given to a large sea-fish, the *Coryphæna Hippuris* of Linnæus, having a bifid tail, and sixty dorsal rays; bearing a strong resemblance to the dorado, or gold-fish. This creature is remarkable for a sort of crest which rises immediately behind it's head, and is continued in a long fin to it's tail; and for another, in some measure answering the above, reaching from the anus to the tail. Aristotle justly observes, that the Hippuris grows the quickest of all fish. It is caught on the coasts of Spain, and some other shores, generally about the month of August; and it's flesh is very delicate and well-flavoured.

HIRARA. A Brazilian animal strongly resembling the hyæna.

HIRUDILLA MARINA. A very singular little animal of the leech kind, having a roundish oblong body, adorned with many longitudinal

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lines or furrows. It is about an inch long, of a greyish colour, and somewhat transparent; it's bowels, which are visible through the skin, appear at first sight like streaks on it's surface; and in the middle of the belly there is a remarkable protuberance, which, when closely examined, is found to be a muscular body, in the shape of a spherical bladder: this, when fully distended, exhibits the appearance of a spherical air-pump, and has all the properties of that machine, which the animal employs at convenience. It's common figure resembles the cup of an acorn, with the mouth a little contracted. The head of the animal resembles that of the common leech. That part of the body which reaches from the head to the middle protuberance is of a very irregular form, frequently in motion, and continually varying it's shape; but the other parts move more slowly and less frequently, and preserve their figure unaltered.

When this creature is desirous of affixing itself to any other body, it makes use of it's protuberance applied closely to the substance, and exhausted of air: hence the external air so firmly presses it's sides against the object, that it is with difficulty removed.

HIRUDO. See LEECH.

HIRUNDO. The classical name of the swallow. See SWALLOW.

HISTRIX. See PORCUPINE.

HOACTLI. An American bird described by Nieremberg, about the size of the common hen. The legs and neck are long; the head is black, and adorned with a beautiful crest of the same colour; the whole body is white; but the tail and the upper sides of the wings are grey. The wings have a greenish cast; the back is sometimes varied with black feathers; the legs are of a pale white colour; and a circle of white, beginning at the eyes, encompasses the head. This bird is common near the Mexican lakes, and builds it's nest among the reeds and sedges that fringe their margins.

HOACTON. A Mexican bird described by Nieremberg; which, according to his account, seems to be of the heron or bittern kind. The belly and neck are white, slightly varied with brown; the rest of the body is brown, variegated with white; and the eyes are large, with pale-coloured irides.

HOACTZIN. An appellation under which Nieremberg has brought to our notice a species of American bird about the size of the hen. The beak is crooked; the breast is of a yellowish white colour; the wings and tail are variegated with large pale grey and white spots; the neck and back are of a brownish yellow hue; and the head is adorned with a crest of white feathers, the inner webs of which are black. This bird, which is seen near Mexico in the autumnal season, generally frequents high trees in the vicinity of waters. It feeds on snakes and other reptiles; and it's voice is loud and disagreeable.

HOANGICOYA. The name of an amphibious animal, said to be a bird in summer, and a fish in winter. See CROCEUS.

HOBBY; the *Falco Subbuteo* of Linnæus. This bird, which is of the long-winged hawk kind, was formerly used in the humbler walks of falconry, particularly in what was termed Daring of Larks. For this purpose the hawk was cast off when the larks, aware of their most inveterate enemy, kept close to the ground through fear, and thereby

thereby gave the fowler an easy opportunity of drawing a net over them.

The Hobby has a prominent and crooked bill, covered at the base with a yellow skin; the upper mandible is furnished with a process; the irides are hazel-coloured; and above each eye there is a white line. The crown of the head, the back, and the coverts of the wings, are of a deep blueish black hue; the hind-part of the head is marked with two pale yellow spots; and each cheek with a large black spot pointing downwards. The interior webs of the secondary and quill-feathers are variegated with oval, transverse, reddish spots; the breast is white, marked with oblong spots of black; the thighs and vent-feathers are a pale orange; the middle feathers of the tail are entirely of a deep dove-colour, the others being barred on their inner webs with ferruginous, and tipped with a dirty white; and the legs and feet are yellow.

The female is considerably larger than the male; her breast is marked with higher-coloured spots; and her legs are greenish. She builds in high trees, in various parts of England; but migrates in October.

HOG. In the Linnæan system the Hog forms a distinct genus of animals of the order of belluæ and class of mammalia; the characters of which are these: the upper fore-teeth are four in number, and convergent; those of the lower jaw are six, and prominent; the canine teeth of the upper jaw are two, and short; those of the under jaw are single and protruded; and the snout is truncated, prominent, and moveable. The Common Hog, the Guinea Hog, the Mexican Musk Hog or Tagaar, the Capybara, and the Babyroussa, belong to this genus.

HOG, COMMON. The Common Hog is so well known, that any description of it may perhaps seem unnecessary; and yet few are acquainted with all the qualities and habitudes of that creature which inquisitive naturalists have remarked.

In animals of the Hog kind, those distinctions seem to unite by which others are separated. They resemble the horse kind in the length of their heads, in having only a single stomach, and in the number of their teeth, which amount to forty-four. With respect to their cloven hoofs, and the position of their intestines, they resemble the cow kind; and in their appetite for flesh, their numerous progeny, and chewing their cud, they resemble those of the claw-footed kind.

Thus these animals may be considered as of a middle nature between the rapacious and the peaceful kinds, nevertheless partaking somewhat of the nature of both. Like the rapacious tribes, their hoofs, on anatomical inspection, appear to be fitted with bones, after the manner of beasts of prey; and the number of their teats serves to increase the similitude. Like the peaceful kinds, in a natural state, they live on vegetables, and seldom seek for animal food, except when urged by necessity; and, though furnished with power sufficient to annoy the boldest animals of the forest, they are equally inoffensive to all.

The Hog is apparently the most filthy and impure of all quadrupeds: however, it may be proper to reflect, that filthiness is an idea merely relative to ourselves; and that from our own sensations we are apt to form a partial judgment, and overlook that wise decree of Providence which adapts every part of creation to its respective inhabitants. The Hog, indeed, seems actuated with

an insatiable desire of eating, and therefore his stomach is capacious; but though he devours the most nauseous offals, we are not therefore to conclude that he is insensible to the difference of food; for whenever he meets with variety, he is known to possess as distinguishing a palate as other animals.

This animal has not improperly been compared to the miser, who during his life-time is useless and rapacious; but, through the effects of his sordidness, becomes of public benefit at his death. The Hog, in his life-time, does not render the least service to mankind; his uncommon brutality sometimes urges him even to devour his own offspring. All other domestic creatures shew some degree of respect for mankind, and even a species of tenderness for children; but this animal will devour infants when prompted by hunger, and seems incapable either of fidelity or affection.

The Hog appears to be more imperfectly formed than any other animals around us which we have rendered domestic. It is less active in its motions, and less capable of knowing what to pursue and what to avoid. The thickness of its hide, together with the coarseness of its hair, render it almost insensible to blows and rough usage. Being naturally stupid, drowsy, and inactive, when undisturbed it will sleep half its time: but it is frequently roused by the calls of hunger; and when those demands are satisfied, it again retires to rest. Its whole life seems to be one continued round of gluttony and sleep; and, were its cravings sufficiently gratified, it would soon become unable to support itself on its legs: nevertheless, it would still continue feeding, lying, or kneeling; a helpless instance of indulged sensuality. The only time this creature seems to have passions of a more active nature, is when it is excited by venery, or when the wind blows with some degree of vehemence; on this last occasion, it is so agitated, as to run violently towards its sty, screaming horribly, as if under the most dreadful apprehensions. It appears also to foresee the approach of bad weather, in carrying straw to its sty in its mouth, preparing a bed, and hiding itself from the impending storm. Nor is it less afflicted on hearing any of its kind in distress; for it seems to sympathize in their sufferings, and to offer its unavailing assistance.

Though the Hog is one of the most unpromising animals in nature for human industry to exert itself on, it has been known to profit so considerably by education, as to perform acts which its apparent stupidity might well have rendered incredible; such as telling the hour of the day by the bare inspection of a watch; selecting such letters as compose the largest and most unusual names; and producing the figures corresponding with the number of persons in a room. Such are the astonishing effects of cultivation, when carried on with assiduity and perseverance.

Most of the diseases of this animal arise from intemperance; measles, imposthumes, and scrophulous swellings, being reckoned among the number: and it is actually believed by some, that its propensity to wallowing in the mire is a natural instinct for the destruction of a species of lice or insects which prey on it. If permitted to live, it will arrive at the age of eighteen or twenty years, and the female will produce till that of fifteen.

As Hogs bring forth from ten to twenty at a litter, they would soon become very numerous, were

they not diminished for the support of man. Their flesh, says Linnæus, is wholesome food for persons of athletic constitutions, or those who habituate themselves to much exercise; but improper for such as lead sedentary lives: it is, however, of general use, and furnishes innumerable materials for epicurism, among which brawn is a kind peculiar to England. In reality, it is an article of great importance to a naval and commercial nation, as it takes salt better than any other flesh, and consequently is capable of being longer preserved. The lard, or fat, is extremely beneficial in medicine, being an ingredient in various sorts of plaisters; and the bristles are formed into brushes of various sorts.

The arts of fattening, rearing, guarding, and managing Hogs, more properly fall under the cognizance of the agriculturist than the naturalist; they constitute a branch of domestic œconomy, which, properly treated, may be extended to a great length: we shall therefore only observe, that where art begins, the history of nature ought to end.

The Hog is found in a domestic state in all parts of the world, except within the frigid zones, and in Kamtschatka. It is also found wild in most parts of Europe, except the British Isles, (where the breed is now extinct) and the countries north of the Baltic. They are very numerous in several parts of the East, in Africa, and America; but, both in a state of nature and subjection, they are unknown in climates excessively severe.

HOG, CHINESE; the *Sus Chinenfis* of Linnæus. The belly of this animal reaches almost to the ground; the legs are short; the tail depends to the heels; and the body is usually bare, a peculiarity commonly observed in the Asiatic swine.

Hogs of this species are widely disseminated over the Oriental Isles. They are found wild in vast numbers in New Guinea, and the circumjacent isles: they also inhabit Gilolo; and eagerly resort to those places where sago-trees have lately been cut down, in order to feed on the remaining pith, which soon renders them very fat.

It appears highly probable that this breed of Hogs was carried from New Guinea to the various newly-discovered islands in the south Pacific. They were first introduced into the New Hebrides, and thence into the Friendly Isles, the Society, and the Marquesas: but all the islands to the eastward of New Guinea, and even New Caledonia, a little to the southward, are destitute of them.

The flesh of these animals, when fed with plantanes, bread-fruit, and yams, is very delicious; but it is often too gross for an European stomach. Our navigators, however, speak in high terms of the many excellent repasts they derived from these Hogs. In almost all the islands recently discovered, they are sacrificed to the subordinate deities of the country; roasted whole, placed on their altars, and there left to decay.

HOG, GUINEA; the *Sus Porcus* of Linnæus. This species is smaller than the common kind, though of the same figure: the colour is reddish; the ears are long and sharp-pointed; and the tail, which is destitute of hair, depends to the heels. It has no bristles; but about the neck and lower part of the back the hair is longer than on other parts of the body. This creature is a domestic variety of the common kind, and its flesh is said to be excellent.

The Siam Hog, described by Buffon under the

appellation of Cochon de Siam, is another variety differing very little from the preceding.

HOG, ÆTHIOPIAN; the *Sus Æthiopicus* of Linnæus. The body of this animal is longer, and the legs are shorter, than in the common sow. It has small tusks in the lower jaw, and very large ones in the upper. Those of old boars bend up towards the forehead in a semicircular form. It has no fore-teeth; the head is large and broad; the nose is broad, depressed, and corneous; and the mouth is small. The colour of the skin is dusky; and the bristles are disposed in little bunches of about five each: these are longest on the beginning of the back and between the ears. The ears are large, sharp-pointed, and internally lined with long whitish hairs; and the tail, which is small and flat, is covered with hairs disposed in tufts or bunches, and extends only to the thighs.

These animals inhabit the hottest parts of Africa, from Sierra Leona to Congo; and they are also found in the Isle of Madagascar. It is likewise probable that the Hogs of Mindanao are of this breed, if the description of Dampier may be relied on. They live under ground; and burrow as expeditiously as the mole, forming almost instantly large holes in the ground by means of their callous snouts. They are very swift and fierce; and cannot be brought to propagate either with the common or Chinese sow. One of the Æthiopian Hogs, at the Prince of Orange's Menagery near the Hague, was turned out to a Chinese sow, which it killed; and afterwards to a common sow, which it treated very severely. Indeed, its savage nature at last proved fatal to its keeper; for he died of a wound in one of his legs which this animal, in its wrath, had inflicted.

HOG, CAPE VERD; the *Sangler de Cape Verd* of Buffon. This species has a long head; a slender nose; and ears upright, pointed, and tufted with very long bristles. It has two cutting-teeth in the upper, and six in the lower jaw; six grinding-teeth on each side in both; and twenty-four in all. The tusks are large, and of an ivory hardness; and those of the upper jaw are thick, and obliquely truncated. The whole body is covered with very long fine bristles, especially about the belly, shoulders, and thighs, where they grow to a great length; and the tail, which is slender, and terminates in a large tuft, reaches only to the first joint of the leg.

This animal, which is found from the Cape of Good Hope to Cape Verd in Africa, grows to a very considerable size; and seems to be the same with the creature seen by Adanson, who calls it a boar of enormous size peculiar to Africa.

HOG, MEXICAN; the *Sus Tajacu* of Linnæus. This animal, called also the Peccary, in some degree resembles a small Hog of the common kind; but its body is less bulky; its legs are smaller; its bristles are thicker and stronger, and more like those of a hedge-hog than the common kind; and, instead of a tail, it is only furnished with a fleshy protuberance, which does not cover its posteriors. From the shoulders to the breast there is a band of white; and on the back a lump resembling the navel in other animals, from which oozes a very fetid liquor.

This creature, which is a native of the hottest parts of South America, and some of the Antilles, lives in forests, but chiefly on the mountains: it is less corpulent than the common sow, and neither delights in mire nor marshy places.

The Mexican Hogs assemble in great droves, and

H O G

and defend themselves from beasts of prey with conduct and resolution. Their most formidable enemy is the jaguar, or American leopard; and the body of that animal is frequently found with several of these Hogs, slain in combat. Dogs seldom possess courage enough to attack them; and, if wounded, they will even turn on the human species, and contend to the last. They feed on fruits, vegetables, roots, and reptiles. Their flesh is said to be tolerable food; but, as soon as they are killed, their dorsal glands must be extracted, otherwise their flesh immediately becomes tainted; and when this operation is deferred for only half an hour, the infection communicated to their flesh proves so very strong, that it is not eatable, nor even supportable.

These animals, though naturally wild, are capable of being tamed; but they never shew any signs of docility or attachment. They are remarkably fierce in defence of their young; they surround the plunderer, attack him with inconceivable fury, and frequently make his life pay the forfeit of his temerity. Like the common Hogs, they are very prolific; and the young follow their dams till they arrive at perfection.

HOG, INDIAN; the *Sus Duobus Dentibus Caninis Fronti Innatis* of Linnæus. This animal has some weak bristles along the back; but the rest of the body is covered with fine short wool, resembling that of the lamb: the tail ends in a tuft, and is often twisted; the body is plump and fixed; the head is oblong and narrow; and the snout is adapted for digging the earth. The ears are small, erect, and sharp-pointed; and the eyes are disproportionably minute. There are four cutting-teeth in the upper, and six in the lower jaw, with six grinders to each jaw; there are also two tusks in the lower jaw, pointing towards the eyes, and projecting almost eight inches out of their sockets. From two sockets on the external part of the upper jaw proceed two other teeth, twelve inches long, and bending like horns, the ends of which almost touch the forehead.

This curious creature inhabits Buero, a small island near Amboyna: it is also found in Celebes, but neither on the continent of Asia nor Africa. It is sometimes domesticated in the Indian islands. In a wild state, it is a gregarious animal, feeding on vegetables, but never ravaging gardens like other swine. When pursued and driven to extremities, it will plunge into the sea, and swim to another island. Though furnished with very formidable tusks, they are totally useless in combat; and are only employed by the animal in suspending it from the bough of some tree. The feet resemble those of the European Hog; and the legs are long and slender.

HOG FISH. A fresh-water fish about a span long: the colour of the scales inclines to a blackish green; the fins and tail are of the same colour; and the eyes are yellow. It is a native of the East Indies; and its flesh is plump, firm, and agreeable.

HOG, SEA. This fish is about fifteen inches in length, and seven in breadth. The skin is extremely thick; and the scales are so close and hard, that they are almost impenetrable by any instrument; but, when boiled, they fall off with ease, and the skin becomes very soft. The flesh is white, tender, and delicious. The mouth is small, but armed with two rows of shining teeth; the back is brown, and furnished with a sharp fin, which the fish can erect at pleasure; and opposite

H O L

to this is another on the belly. The sides are white mixed with yellow, which gradually turns to an ash-colour on the back; and the belly is of a shining silvery whiteness.

HOG LOUSE. This insect is about half an inch in length, and a quarter in breadth. The colour is a livid black, especially when found on dunghills; but such as frequent dry situations are cinereous. It has fourteen feet, each having a single joint; and also two short feelers. The body is of an oval shape; but, when touched, the animal rolls itself up into a kind of ball. It is often found among rotten timber, and on decayed trees; and in winter takes up its lodging in the chinks of walls. The female lays a considerable number of white shining eggs, which, when first hatched, produce a whitish sort of worm, apparently without life or motion.

This insect is esteemed very efficacious in medicine: it is prescribed as diuretic and aperient; and is often given with success for dimness of sight.

HOITLALLOTL. An American bird described by Nieremberg, and by him called *Avis Longa*. It runs with extraordinary swiftness. The body and tail are uncommonly long; the beak is also very long, black above, and grey beneath; the whole body is of a yellowish white colour, except that the shoulders are variegated with black and white spots, and that the rump is of a blackish yellow hue; and the tail, which is green, possesses all the splendor and vivid beauty of the peacock's. The flesh is almost unfit for food.

HOITZITZIL. An appellation given by some naturalists to the *guainumbi*, or humming-bird, the smallest of the feathered tribe.

HOITZITZILLIN. An American bird described by Nieremberg; the beauty of whose feathers is so much esteemed among the Indians, that it is not lawful to kill it, but only to strip it of its plumage, and then turn it loose. Hernander informs us, that the natives allure these beautiful birds to lime-twigs placed for catching them, by strewing boiled Indian wheat around. They fly in large flocks, nestle together on trees, and make a confused hissing noise.

HOLIBUT; the *Pleuronectes Hippoglossus* of Linnæus. This is the largest fish of the flounder genus: some have been caught in the British seas weighing from two to three hundred pounds; and in those of Newfoundland, Greenland, and Iceland, much larger are found. Indeed, they constitute no inconsiderable part of the food of the Greenlanders; being cut into large slips, and dried in the sun.

These fish are commonly exposed to sale in the London markets, cut into large pieces. Their flesh is extremely coarse, except that part which adheres to the lateral fins; and it is fat and delicious, but surfeiting. With respect to its length, the Holibut is the narrowest of any of the genus, except the sole; and is perfectly smooth, and destitute of spines. The upper part is dusky, and the under of a pure white colour. It is the most voracious of all flat fish; and has been known even to swallow the lead weight at the end of a line with which the seamen were founding.

HOLOSTEUM. An appellation by which Bellonius distinguishes the ostracion, a fish caught in the River Nile, covered with a hard shelly skin, and approaching in its shape to a pentangular figure.

HOLOTHURIA. A genus of sea-worms of the

the order of mollusca in the Linnæan system. Their distinguishing characters are, a pliable, naked, gibbous body, terminated by the anus at one extremity, and furnished at the other with many tentacula encompassing the mouth. Linnæus enumerates nine species.

HOODED SERPENT; the *Serpens Indicus Coronatus*. This reptile is so called from an excrescence resembling a hood or cap on the top of its head. It is generally about a yard long, and three-quarters of an inch thick; and the skin is chiefly of a fine vivid yellow colour. The poison of this Serpent is extremely subtle; and is by some reckoned the strongest in nature.

HOOPER. An appellation given by some authors to the *cygnus ferus*, or wild swan.

HOOPOE; *Upupa*. This makes a distinct genus of birds of the order of *picæ* in the Linnæan system; the characteristics of which are these: the beak is bent, convex, subcompressed, and in some degree obtuse; the tongue is obtuse, triangular, and very short; and the feet are ambulatory. Linnæus has classed three species under this genus; the *Upupa Epops*, the *Promerops*, and the Bird of Paradise.

HOOPOE, COMMON; the *Upupa Epops*. This bird occasionally visits the British islands: it is also found in various parts of Europe and Africa, and even as remote as Ceylon. The Turks call it *Tir Chaous*, or the messenger-bird; in Sweden its appearance is vulgarly considered as a presage of war; and it was formerly deemed in our country a forerunner of some calamity.

The usual weight of the Hoopoe is about three ounces: the beak is black, slender, and slightly hooked; the head is adorned with a most beautiful and elegant crest, rising two fingers high, and composed of two series of feathers, which the bird raises and depresses at pleasure: the tips of these feathers are ornamented with black and white; and the rest is of a pale orange-colour. The neck is of a pale reddish brown hue; the breast and belly are white, variegated with longitudinal streaks, which disappear in the middle as the bird grows older; the tail is black, and composed of ten feathers, having a white spot in it of a crescent shape, the horns pointing towards its extremity; the legs are short and black; and the wings, which are transversely streaked with white, when folded, do not reach to the end of the tail.

The Hoopoe feeds on various insects, berries, and vegetables; breeds in hollow trees; and lays two ash-coloured eggs. According to Linnæus, it receives its name from its note, which has a similar sound to the word: but perhaps it may be derived from the French *Huppé*, Crested; a peculiarity sufficient to distinguish this beautiful bird from all others.

HORN-COOT. A name given by fowlers to the great Horn-owl.

HORN-FISH. An English appellation for the fish more usually known by that of the gar. It is accounted by some authors a species of the *acus*, or tobacco-pipe fish; but this opinion seems to have originated solely from a similarity of shape. It is properly a species of pike or esox.

HORNED FISH. The figure of this fish somewhat approaches to an oblong square, the back being the narrowest, and the belly the widest part. The body is entirely covered with a thick, strong, horny case, fixed, and unpliant; the exterior surface is divided by lines into sexangular por-

tions, with a kind of asterism in the centre of each and the whole body appears of a dusky colour, except the irides, which are orange-coloured. The mouth is small, and the teeth are long and slender; from above the eyes project two horns; and from the plane of the belly spring two more, tending backwards. A fin rises on the hinder part of the back, and another on the belly below the vent; and the tail also hath a pretty long fin.

This singular fish is a native of the Oriental seas; and has sometimes been caught on the coasts of Madagascar.

HORNET. This insect is of the wasp kind, but twice as large. It is furnished with four wings, the first pair of which is by far the largest; and with these the creature flies with great velocity. The head is oblong, and yellowish; the eyes are prominent and semilunated; and between them there are two falciform antennæ. The feet or legs are six in number; the shoulders are of a dark brown and reddish chesnut-colour; the body is united to the shoulders by a sort of thread; the middle of the fore-part is of a dark brown hue, marked with a saffron belt; and the hinder part is wholly of a saffron colour, except that it is variegated with eight brown spots. Near the belly there are four black spots on each side; and the tail is armed with a strong venomous sting.

These insects, when flying, are more noisy than wasps, as well as much more mischievous and dangerous. It is said that a few of them are capable of killing either a man or a horse; and indeed a summer rarely passes without affording some fatal instances of their fury on such as rashly disturb them in their retreats. They make their appearance generally about the commencement of the dog-days, during which they are peculiarly malignant. Like bees, they are said to have a supreme head; they live in societies, and appear subject to some regulating power. They are seldom known to exist above two years. During winter they lie hid, like other insects, sometimes in the trunks of hollow trees, and sometimes at their roots: there they make their nests, and construct their cells with the mouths always downward, which in a great measure preserves them from the rain. The cells are all sexangular, and externally seem composed of films like those of birch-bark. They pursue other winged insects; and, according to some naturalists, destroy small birds by stinging them in their heads, after which they find means to carry them to their nests. However, they are less provident than the more useful congenerous insects the bees, in laying up a sufficient stock of provisions for the winter; and, in consequence of this neglect, many of them die through want; which circumstance providentially keeps the breed from becoming very numerous.

HORNET-FLY. This insect so greatly resembles the hornet, that an incurious observer could scarcely distinguish them. It has two large wings; the principal colour of the body is yellow, with two large transverse black lines; the corselet is black; and the head is yellow.

At a proper season, these flies lay a large number of oblong white eggs; which afterwards hatch into large and long worms, that feed on the worms and nymphs of the humble bee.

HORSE. In the Linnæan system, the Horse forms a distinct genus of animals of the order of *belluæ*; the characters of which are these: the fore-teeth are six in each jaw, the upper being erect

H O R

erect and parallel, and the lower more prominent; the canine teeth are single, placed at a distance from the rest, and not much longer; and the hoof is whole and undivided. According to these definitions, the equus caballus or Horse, the ass, the wild ass, the mule, and the zebra, are included in the same genus.

The Horse appears to be the most beautiful of all quadrupeds: the noble extent of his form, the glossy smoothness of his skin, the graceful ease of his motions, his strength, and, above all, his activity and utility, render him one of the principal objects of human curiosity and care; and teach us to regard him as an animal in whose welfare we are essentially interested. He is the most generous, docile, spirited, and yet obedient, of all creatures; adapted for every purpose, the chace, the draught, and the race; and produced in almost every part of the world, with as little variation as can well be expected. We shall therefore give one general description of this noble quadruped, remarking his varieties as we proceed, and explaining his multifarious qualities.

To form an adequate idea of this stately animal in his native simplicity, we must not look for him in the pastures or the stables, to which he has been consigned by man, but in those wild and extensive plains where he has been originally produced, where he ranges without controul, and riots in all the variety of luxurious nature. In this happy state of independence, he disdains the assistance of man, which only tends to servitude. In those boundless tracts where he expatiates at liberty, he seems not to be incommoded with the inconveniences to which he is obnoxious in Europe. In the happier climates of Africa, the verdure of the fields supplies his wants; and the genial warmth of the sky is well adapted to his constitution, which naturally seems formed for heat. His enemies are few; for none but the larger kinds of animals will venture to attack him, any one of which he is singly able to overcome: but he seeks his safety in society; and, in those countries, it is not unusual to see five or six hundred Horses feeding together.

As they are naturally mild in their dispositions, they are satisfied with remaining entirely on the defensive. The pastures supply them abundantly with food; and all their precautions are merely for their security, in case of a surprisal. Whenever they sleep in the forests, one of their number performs the office of a sentinel, to warn his associates of approaching danger; and this commission they execute by turns. If, while they are feeding by day, any man approaches them, their sentinel boldly advances towards him, as if to examine his strength, or to intimidate him from proceeding. If the person advances within pistol-shot, the sentinel alarms his fellows by a loud kind of snorting; on which signal they all fly off with the rapidity of the wind, their faithful sentinel always bringing up the rear.

Though the Horse is found in almost all countries, it is evident that the colder climates do not agree with his constitution; for in them his form is altered, and he is found not only diminutive, but ill-shaped. We have the testimony of the ancients, that there were wild Horses once in Europe: at present, however, they are totally brought under subjection; and even those in America are of Spanish original, which being sent thither on the first discovery of the country, have since become wild, and overspread all the south of that vast continent,

H O R

almost to the Straits of Magellan. These are in general a small breed, of about fourteen hands high: their jaws are thick; their joints are clumsy; and their ears and necks are long. They are tamed with facility; Horses being naturally gentle, complying creatures, and resisting rather from fear than obstinacy. They are caught by means of a kind of nooses; and then held fast by their legs, and tied to trees, where they are left for the space of two days without either food or water. By that time they begin to grow faint, and consequently become manageable; and, in a few weeks, every trace of their original wildness is lost. If by any accident they are once more set at liberty, they never become wild again, but know the voices of their masters, and obey their calls.

American Horses, however, cannot properly be ranked among the wild races, being originally bred from such as were tame. We must carry our researches into the old world for this animal, if desirous of seeing him in a state of nature; in the extensive deserts of Africa, in Arabia, and those vast countries that separate the more southern nations from Tartary. Large droves of these animals are seen wild among the Tartars: they are of a small breed, extremely swift, and difficult to be caught. As their societies are select, they will not admit of any strange animals among them, though of their own kind; and whenever they perceive a tame Horse attempting to associate with them, they instantly gather round him, and oblige him to provide for his safety by flight. To the north of China, there are also vast numbers of wild Horses; but they are of a weak and timid breed, small in stature, and destitute of spirit.

About the Cape of Good Hope there are considerable numbers of Horses in a state of nature; but they are small, vicious, and untractable. They are likewise found wild in various other parts of Africa; but the wretched inhabitants of that country are either ignorant of their uses, or unacquainted with the necessary arts for taming them. It is usual for the negroes, who are transported from thence to America, when they first see a Horse, to express both terror and surprize. In some parts of Africa, where this creature runs wild, the natives seem to consider him rather as a dainty for food than a useful creature, capable of assisting their operations in peace and war; and whenever the Angolans or Cassirarians catch a Horse, it is only with an intent to feast on his flesh.

But, of all the wild Horses in the world, Arabia produces the most beautiful breed, the most generous, swift, and persevering. Though not very numerous, they are nevertheless found in the deserts of that country, and the natives employ every stratagem to secure them. They are extremely active, but of a smaller size than those which are bred up tame: their colour is brown; their manes and tails are very short, and the hair is black and tufted. No adequate ideas can be formed of their fleetness; and the only method of catching them is by traps concealed in the sand, which entangling their feet, the hunters at length come up, and either kill or carry them off alive. If the Horse be young and tender, the Arabians consider him as a peculiar delicacy; but if, from his shape and vigour, he promises to be serviceable in his more noble capacity, they tame him by fatigue and hunger, and he soon becomes an useful domestic animal. The natives usually try the swiftness of their Horses by hunting the ostrich,

they being the only animals whose speed is comparable to that of this bird. The instant the ostrich perceives itself aimed at, it makes for the mountains; while the horseman pursues it with all possible expedition, and endeavours to cut off its retreat. This being effected, the chase is continued along the plain; while the ostrich makes use both of its legs and wings to accelerate its progress. However, the Horse is frequently able to outrun it; and in that case the poor bird is obliged to have recourse to art for eluding the hunter, by making use of frequent gyrations: at last, finding all its efforts ineffectual, it hides its head in the sand, or wherever it can, and patiently suffers itself to be taken. If the Horse, in a trial of this kind, shews a sufficient degree of fleetness and strength, his price becomes proportionably great; and some that have acquitted themselves with credit, have been valued at a thousand guineas.

At present, however, the Horses thus caught and trained are but few: the value of Arabian Horses in every part of the world has thinned the herds of the wild breed; and there are very few to be found in those countries, except such as are tame. Historians inform us, that the Arabians first began the management of Horses in the time of Sheque Ismael. Before that period, these animals wandered wild along the face of the country, neglected, and useless; but the natives then first tamed their fierceness, and improved their beauty: and at present they possess a race of the most elegant Horses in the world, with which they drive a considerable trade, and furnish the stables of princes at immense prices.

There is scarce an Arabian, however poor in other respects, who is not furnished with his Horse. In general, these people make use of mares in their ordinary excursions; being taught by experience, that they endure hunger, thirst, and fatigue, better than Horses: they are also less vicious, of a gentler nature, and more harmless among themselves. The Turks, on the contrary, are not fond of mares; and the Arabs sell them such Horses as they do not think proper to keep for stallions.

The Arabians preserve the pedigrees of their Horses with great care, and trace them for several ages. They know their alliances, and their entire genealogy. They distinguish the races by different names, and divide them into three classes: the first is that of the nobles, or the ancient breed, unadulterated on either side; the second is that of the Horses of the ancient race, but adulterated; and the third is that of the common and inferior kind. The last are sold at a very moderate price; but those of the first class, and even the second, extremely dear.

Taught by long experience, the Arabians know the race of a Horse by his appearance; and can tell the name, surname, colour, and marks, properly belonging to each. When a mare is covered, the owner receives a written attestation of the fact: and when she has produced her foal, new witnesses are called; and a new attestation is signed, in which are described the marks of the foal, and the day is entered when it was brought forth. These testimonies increase the value of the Horse, and are consigned to the person who purchases him. The most ordinary mare of the noble breed sells for five hundred crowns; many are valued at a thousand; and some of the very finest kinds are estimated at no less a sum than fifteen hundred pounds sterling.

The Arabians having no other habitation but a tent, that also serves them for a stable; so that the husband, the wife, the children, the mare, and the foal, live indiscriminately together: the little children frequently lie on the body, or on the neck, of the mare; whilst she seems fond of their caresses, and never offers to hurt them. The Arabians never beat their horses, but treat them with great gentleness; address them as if rational beings; and never attempt to increase their speed by the whip or spur, except in cases of necessity: however, when either of these is applied, they set off with amazing fleetness, leaping over every obstacle with as much agility as a buck; and should their riders happen to be dismounted, they stand still in the midst of their most rapid career.

The Arabian Horses are of a middle size, easy in their motions, and rather inclined to leanness than obesity. They are regularly dressed every morning and evening; and with so much care, that the smallest asperities or inequalities are not to be seen on their skins. During the day, they are kept from food, receiving only a little water; but about sun-set, bags are suspended from their heads, each containing nearly half a bushel of clean barley: this they eat in the course of the night, and the bags are removed again in the morning. In the beginning of March, when the grass is of a sufficient height, they are turned out to pasture; and about this time likewise the mares are consigned to stallions. When the spring is at an end, they are taken from pasture, and subsisted the remainder of the year on barley, except now and then a little straw. At the age of two years, or two and a half at most, they are accustomed to the menage; and are then always kept ready saddled at the doors of the tents from morning till night, in order to be prepared against any surprize.

Sensible of the great advantages derived from their Horses, the Arabians have a law which prohibits the exportation of their mares; and those stallions which are imported into England, are generally purchased on the eastern shores of Africa, and come round by the Cape of Good Hope. They are commonly about fourteen hands and a half high; their motions are more graceful than those of our Horses; and they are also superior in fleetness; but their speed is irregular, and they are incapable of bearing long fatigue: nevertheless, they are justly considered as the finest breed in the world, and as that from which all others have derived their most valuable qualifications. It is even probable that Horses had their origin first in Arabia; for there, instead of crossing the breed, they are studious to preserve it entire. In other countries it is necessary to change the races, otherwise the Horses would soon degenerate; but, in Arabia, the same blood has passed down through a long succession, without any diminution either of beauty or strength.

The Arabian breed has spread over all Barbary, and has even extended itself across that vast continent to the western shores of Africa. It has also been diffused into Egypt; and even into Persia, where, according to Paulus Jovius, there are studs of ten thousand white mares all together, which are very fleet, and their hoofs so hard, as not to stand in need of shoeing. In these countries, Horses generally receive the same treatment as in Arabia, except that they are littered in bags of their own dung, dried in the sun, and then pulverized. When this done, which is spread under the Horse

H O R

about five inches thick, is moistened, it is again dried, and spread as before. These Horses, which strongly resemble each other, are usually of a slender make; their legs are fine, bony, and wide set; their manes are thin; their chests are fine; their heads are beautiful; their ears are small and pointed; their shoulders are thin; their sides are elegantly rounded; their crops are somewhat longish; and their tails are generally set high. In Numidia, however, the race of Horses is much degenerated; the natives having been discouraged from keeping up the breed by the Turks, who seize on all the good Horses, without making their owners the least compensation. The Tingitanians and Egyptians are now famed for rearing the finest Horses, both with respect to beauty and size. The finest of the Egyptian breed are about sixteen hands high; and their symmetry is the most exact in nature.

The Spanish genetie is generally ranked next to the barb. These Horses are small, but extremely beautiful and fleet. Their heads are pretty large; their manes are thick; their ears are long, but well pointed; their eyes are animated and lively; their shoulders are thickish; their chests are full and large; their croups are round and large; their legs are beautiful, and without hair; their pasterns are a little of the longest; and their hoofs are somewhat too high: nevertheless, they move with great ease, and carry themselves very gracefully. They are usually of a black, or dark bay colour, without any white marks; and they are all branded on their buttocks with their owners names. Those of the province of Andalusia are esteemed the best: they are said to possess courage, obedience, grace, and spirit, in a very superior degree; and have therefore been preferred, as War-Horses, to those of any other country.

The Italian Horses are now less beautiful than formerly, the breed having been greatly neglected. Nevertheless, there are still some beautiful Horses in that country, particularly among the Neapolitans, who use them chiefly for draught. In general, they have large heads and thick necks; are restive, and consequently ungovernable: these faults, however, are recompensed by the largeness of their size, their spirit, and their graceful, easy paces. They have a particular aptitude for prancing, and are excellent for shew.

The Horses of Denmark are of a large, strong make, and therefore preferable to all others for the draught. Some of them are well shaped; but in general they have thick necks, heavy shoulders, long hollow backs, and narrow croups; however, they all move with ease, and are found to be well adapted either for parade or war. They possess all manner of colours, and often very whimsical ones; some of them being mottled like the leopard, and others streaked like the tiger.

The German Horses, though originally sprung from Arabian and Barbary stocks, are nevertheless small and ill-shaped; their hoofs are tender; and they are weak, and apt to be jaded. The Hungarian Horses, on the contrary, are excellent both for the draught and saddle; and, when applied to the purposes of war, their nostrils are usually slit, designedly, as we are informed, to prevent their neighing.

No Horses are preferable to those of the Dutch for the draught; and for this purpose they are esteemed over all Europe. The province of Friesland produces the best. The Flemish Horses are

H O R

much inferior to the former, having commonly large heads, flat feet, and swollen legs.

France produces a very motley breed of Horses, but few that are valuable. The best of that country come from Limosin: these bear a strong resemblance to barbs; and, like them, are excellent for the chace, though a long time in arriving at perfection; while young, they must be conducted with great care, and are not backed till eight years of age. Normandy also furnishes some good Horses, though they are better adapted for war than the chace. French Horses are usually heavy-shouldered; a fault opposite to that of the barbs, which are commonly too thin in their shoulders, and consequently apt to be shoulder-slipt.

By great assiduity, and unceasing application, the English Horses are now become superior to those of any other part of the world, for size, strength, beauty, and fleetness. In this island, indeed, the breed of these creatures is as mixed as that of its inhabitants. From the frequent introduction of foreign Horses, we can boast of a greater variety than any other country: few other kingdoms produce more than one kind; but ours, by a judicious mixture of the several species, by the happy diversity of our soil, and by our superior skill in management, may triumph over the rest of Europe in having brought this noble animal to the highest degree of perfection. The English Horse is at present known and allowed to excel the Arabian both in size and swiftness, to be more durable than the barb, and more hardy than the Persian. To such amazing fleetness have some of these animals arrived, that they have run a mile in little more than a minute, and frequently performed a race of four miles in less than seven minutes. However, this superior degree of swiftness is applicable only to some particular Horses; for the generality fall considerably short of it, notwithstanding the easy victory they gain over other European couriers.

These fleet Horses derive their origin from Arabia, the seat of the purest and most generous breeds. The hunter is a happy combination of the former with others of superior strength, but inferior in swiftness and lineage: this, in fact, is a necessary union; for the fatigues of the chace require the spirit of the one, as well as the vigour of the other, to support it.

No other country can produce a breed of Horses equal in strength and size to those of England which are destined for the draught, or the combined strength and activity of those that compose our cavalry. In the metropolis, there are instances of a single Horse being capable of drawing, for a small space, three tons weight; but which could easily draw half that weight for a continuance. It has been usual for one of the Yorkshire Pack-Horses to carry a burden of four hundred and twenty pounds weight over the highest hills of the north, as well as along the most level roads. Some of our Mill-Horses will carry, at one load, thirteen measures, which, at a moderate computation of seventy pounds each, will amount to upwards of nine hundred pounds. However, when it is considered that the animals are habituated to support these amazing weights by degrees, and that the spaces they travel are but short, the task will appear less surprising.

The increase of population, the extension of manufactures, together with the neglect of internal navigation, have occasioned the number of our Horses

H O R

Horses to be multiplied; an excess of wealth has increased the number of carriages, and added to the necessity of an extraordinary culture of these quadrupeds; and the reputation they have acquired on the continent has also made them a branch of commerce, and proved an additional stimulus to their propagation.

The French, and some other nations, in their description of our Horses, though they admit that they are strong and spirited, find fault with the awkwardness of their motions, and their want of grace and elegance. But while they venture those strictures, they do not reflect, that this seeming want of grace is entirely the result of our manner of breaking these animals; and that the defect is not natural, but adventitious. Speed is a quality principally consulted by us in the motions of this animal; but the French, and other continental nations, pay more attention to parade and spirit. We always throw our Horses forward, while they put them on their haunches; we teach them an easy method of going, so as to cover a great deal of ground: on the contrary, they throw them back; which circumstance, while it contributes to shew, unquestionably lessens utility. From our manner of breaking the Horse, it must be acknowledged that the animal is sometimes apt to fall forward; while the French managed Horse never falls forward, but generally on one side. However, it would certainly be no difficult task to give our Horses all that grace which foreigners so much admire; though at the same time it would render them less swift and durable.

But whatever contempt foreigners might formerly have expressed for our Horses, they are now sufficiently convinced of their error, and have accordingly altered their opinion. English hunters are now considered as the most useful Horses in the world: numbers of our geldings are exported to the continent, and sold at very high prices, notwithstanding a law prohibiting their exportation, which, with some variation, has been in force ever since the time of King Athelstan.

Roger de Belegme, created Earl of Shrewsbury by William the Conqueror, is the first who is recorded to have attempted improving our native breed of Horses. This nobleman introduced Spanish stallions into his estate at Powisland, in Wales; from which circumstance that part of the country was for many ages after famous for a swift and generous breed of Horses. However, at that early period, strength and fleetness were more regarded than beauty; the shape of the Horses, during the time of action, being entirely hid by coats of armour, with which the knights invested them, either for ornament or defence.

In the reign of King Stephen, the number of Horses, in London alone, is said to have amounted to twenty thousand: but, in the reign of Queen Elizabeth, the whole kingdom could not supply two thousand to form a body of cavalry. At present, the former numbers seem to be revived, and even augmented; and, in time of war, thirteen thousand horsemen have been fitted out, without any sensible decrease of the breed.

We are informed that there are very good Horses in the islands of the Archipelago. Those of Crete were in high estimation among the ancients, for their strength and swiftness: at present, however, they are but little used even there, the country being rocky, mountainous, and irregular.

The original Horses of Morocco are much in-

H O R

ferior in size to the Arabian breed, but they are very fleet and vigorous. Turkey produces Horses of almost every race; Arabians, Tartars, Hungarians, and the aborigines of the country. The latter, which are extremely beautiful and elegant, possess a great deal of fire, swiftness, and docility; but they are incapable of bearing long-continued fatigue.

The Persian Horses are, in general, the most beautiful and valuable in all the East. The pastures in the plains of Media, Persopolis, Ardebil, and Derbent, are well adapted for rearing them; and their propagation was formerly encouraged by the government. They are generally of a middle size; and though some are found of the smallest stature, that circumstance does by no means either impair their beauty or their strength. Nevertheless, many of them are as large as the English Saddle-Horses: they have all thin heads, fine crests, narrow breasts, small ears, fine legs, hard hoofs, and elegantly-turned croups; they are docile, spirited, nimble, hardy, courageous, and capable of supporting the greatest fatigue. Great numbers of these are annually transported into Turkey, but more into the East Indies: however, all travellers agree, that they are not comparable to the Arabian Horses, either for courage, strength, or beauty.

The Horses of India are of a very indifferent kind. Those used by the grandees up the country are brought from Arabia and Persia; they are sparingly fed with hay in the day-time; and at night with boiled peas mixed with sugar and butter: this kind of food, which appears to be very nutritive, assists them in bearing up against the almost intolerable heat of the climate. Those Horses naturally belonging to the country are very small and vicious. Taverner says they are so very little, that the young Mogul prince, when only seven years of age, rode one of them whose size scarcely exceeded that of a greyhound: and one of them was lately brought over to this country, as a present for the Queen, which was only about nine hands high, and very little larger than a common mastiff.

Indeed, it is highly probable that the extremes of heat and cold are equally inimical to this noble animal. The Horses of the Gold Coast, and of Guinea, as well as those of India, are extremely small, but docile. In Guinea, it is a common exercise with the grandees of that country, who are excellent horsemen, to dart out their lances before them when on full gallop, and to catch them again before they reach the ground. They have also a pastime on horseback, (requiring much dexterity on the part of the rider, and a great share of activity on that of the Horse,) which consists in striking of a ball with a battledore, while on a full gallop, and following it with such speed as to hit it again before it comes to the ground; and this they sometimes repeat for the space of a mile with amazing agility.

The Chinese Horses are scarcely superior to those of India, being small, feeble, ill-proportioned, and timid. Those of Corea are not above three feet high; and so very timorous, that they cannot be trained to the arts of war. It may therefore be justly said, that the Tartarian Horses were, in reality, the conquerors of China. They are, indeed, extremely servicable in war; and, though of a moderate size, surprizingly patient, vigorous, bold, and swift. The Tartars and their Horses live together almost after the same manner as the Arabians.

Arabians: they begin to back them when only about seven or eight months old, placing their children on them, who easily manage them at that early age. Thus they break them by degrees; till at last, when they are about six or seven years old, they are able to endure the greatest hardships: some of them have been known to march two or three days without ever halting; and to be without any provender for five or six, except a handful of grass every eight hours; and, besides, to abstain from drinking for twenty-four hours together. These Horses, however, lose all their strength when introduced into China or the Indies; but they seem rather to improve in Turkey and Persia.

There are also fine Horses in Mingrelia and Circassia; and some which are highly valued in the Ukraine, Wallachia, Poland, and Sweden: but of such we have no particular account.

If we consult the ancients respecting the nature and qualities of Horses of different countries, we shall find that the Grecian, and particularly the Thessalian, were reputed excellent for warlike purposes; that those of Achaia were remarkable for their size; that the most beautiful came from Egypt, and were also extremely prolific; that the Horses of Ethiopia were of but small estimation; that Arabia and Africa furnished very beautiful steeds, and well adapted for the course; that those of Italy, and particularly of Apulia, were very good; that the Horses of Sicily, Cappadocia, Syria, Armenia, Media, and Persia, were equally esteemed for their fleetness and vigour; that the Sardinian and Corsican Horses, though small, were spirited and courageous; that those of Spain resembled the Parthian in being well adapted for war; that in Wallachia and Transylvania, there were Horses with bushy tails, and manes pendent to the ground, which were extremely swift and active; that the Danish Horses were excellent leapers; that those of Scandinavia were small, but well-shaped and active; that the Flanders breed was strong; that the Gallic Horses were very useful in carrying burdens; that those of Germany were diminutive, ill-shaped, and unserviceable; that the Swiss and Hungarian Horses were valuable; and, finally, that those of India were very diminutive, feeble, and timid.

Such are the different accounts of the distinct races of Horses in various parts of the world, both in ancient and modern times: but, respecting animals so intimately connected with man, and so immediately under his care, nothing can be advanced which is applicable to all times and climates. According to the degree of cultivation bestowed on them, Horses either improve or degenerate: their qualities of sagacity and docility alone remain inherent; and these neither change of climate nor diversity of management is able to obliterate.

Though Horses are endowed with amazing strength, they seldom exert it to the prejudice of their masters: on the contrary, they endure the greatest fatigue for their benefit. They possess benevolent dispositions; and a dread of the human race, together with a certain consciousness of the services they are capable of rendering them.

Hoofed quadrupeds are in general domestic, necessarily compelling them to solicit our protection. Wild animals are furnished with feet and claws adapted to the formation of dens and retreats from the inclemencies of the weather; but the former are obliged to have recourse to man for artificial

shelter, as nature, in all climates, does not supply them with necessary food throughout the whole year.

Providence, which has wisely adapted the several services of domestic animals to the benefit of the human race, has also ordained, that the parts of such as have been most useful during their lives, should contribute the least to our benefit after death. The skin of the Horse is of but little value; his flesh is totally unfit for food; and no part of him is essential either in medicine or manufacture.

The Horse, as being a martial animal, was dedicated to Mars. The Persians, Armenians, and Massagetæ, sacrificed Horses to the Sun. The Suevi, an ancient people of Germany, according to Tacitus, maintained white Horses in the sacred woods at the public charge, and from them drew omens. The sight of a Horse was generally considered as a prognostic of war. Aeneas had scarcely landed in Italy, before he saw four white Horses feeding in a meadow; on which Anchises immediately exclaimed—‘O foreign land, thou menacest war against us!’

The definitions of a perfect Horse, as quaintly penned by Camerarius, run thus: ‘It must,’ says he, ‘have three parts like those of a woman; the breast must be broad, the hips round, and the mane long. It must in three respects resemble a lion; its countenance must be fierce, its courage must be great, and its fury irresistible. It must have three qualities belonging to the sheep; the nose, gentleness, and patience. It must have three of a deer; head, leg, and skin. It must have three of a wolf; throat, neck, and hearing. It must have three of a fox; ear, tail, and trot. It must have three of a serpent; memory, sight, and flexibility. And, lastly, three of a hare, running, walking, and perseverance.’

HORSE-WORM. A species of fly-worm, called also Bott, produced from eggs deposited by a two-winged fly, of the shape and size of the humble bee, in the intestines of horses.

Worms in the human viscera have not been longer known to the world than those in horses; and farriers of every age have had their remedies for the long Worms bred in their intestines, and also for the short ones. The short ones are the animals now under consideration. But though mankind have been so long acquainted with their existence, they knew not their origin till Vallisnieri discovered that they were produced from the humble-bee flies: these flies always frequent the open fields, and are never found about towns and houses; for which reason those horses which are kept in stables during summer and autumn, are never infested by these Worms.

About the latter end of summer, these insects, so inimical to horses, are seen buzzing about their backs in the open fields, watching for an opportunity of depositing their eggs where nature has taught them to perform this operation: and Horses, at this season, are extremely sensible of the business in which these little annoyers are engaged; for they jump about, kick, and run, at the very sound of their wings.

These flies frequently settle under the tail of the horse; and, by means of some gentle titillation, occasion the animal to open its fundament a little: this they no sooner perceive, than they enter, and immediately lay their eggs. The Worms hatched from these eggs, or perhaps living Worms there

H O U

deposited if the fly is of the viviparous kind, soon find their way farther up the intestines, and often penetrate even into the stomach. After these Worms have had sufficient time to arrive at their destined growth, they naturally quit their abode; and, advancing towards the lower parts of the intestines, are either voided with the dung of the horse, or crawl out spontaneously.

The figure of these Worms does not present us with any thing singular. They are somewhat of a conic shape, their heads being pointed, and their posteriors broad. They are of different colours, some being greenish, others yellowish, and some brown. They are each provided with two crustaceous hooks, by which they lay hold of any substance, and so move themselves along; and this prevents their being forced out with the excrements of the animal.

When there is only a small quantity of these Worms lodged in the viscera of a horse, they seldom prove injurious to his health: but they sometimes encrease so prodigiously, as to bring on the most dreadful distempers; and, in some years, when numbers of horses have died of an epidemic malady, on opening their intestines, vast multitudes of these insects have been found alive in their stomachs, each having eat itself a sort of cell in the membrane of the stomach, and all being lodged there together as close as the seeds in a pomegranate.

When these Worms naturally quit their original abodes, they crawl about till they find some place of security, where they form shells of their skins; and, after passing through all their various transformations, attain their last and most perfect state.

As a cure for Worms in horses, clysters of oil are generally prescribed; but this mode of treatment is probably inefficacious, as oil, though it may increase the lubricity of the parts, and tend to deprive some of the insects of their hold, is certainly not fatal to the existence of one individual.

HORSEMAN. An appellation given to a bird about the size of the pigeon, called by the French Chevalier. See **CHEVALIER**.

HOTAMBÆIA. A species of serpent found in the East Indies, of a greyish yellow colour, and a very foetid smell.

HOTTENTOT FISH. This fish is so called because the Dutch first purchased some of them from the Hottentots. There are two or three varieties of them; one of which has it's back and sides of a blackish colour, and it's head of a dark purple. Another variety is of a deep blue, and seems to be spotted. The first sort is somewhat rounder, broader, and shorter, than the second. It weighs about a pound, and is seven or eight inches long.

These fish feed on sea-weeds, and any offals that happen to be thrown into the water. The Hottentots catch them with angles, whistling and making a great deal of noise at the same time; and imagine that this device induces them to bite the hooker. Their flesh is wholesome and well tasted; and, when the fishermen cannot dispose of it fresh, it is salted and dried in the sun, and sold to such mariners as happen to touch on the coast.

HOUND. Hounds may be distinguished, with regard to their manner of hunting, into such as discover and pursue the game by sight, and the quickness and swiftness of their motions; of which kind are the Gaze-Hound, the Grey-Hound, and the Terrier: and those which find and pursue the game by the excellence of their scent; of which there are several varieties. See **Dog**.

H U M

HOUND-FISH. An appellation given to two different fishes of the *squalus* genus; one distinguished by the name of the smooth, and the other by that of the prickly Hound. See **GALEUS LÆVIS**, and **GALEUS SPINAX**.

Willughby, and ichthyologists in general, mention another species of Hound-Fish, called the Starred Hound, or *Galeus Asterias*; but Artedi considers this only as a variety of the Smooth Hound-Fish.

Another species is likewise mentioned by some naturalists, called the Rough Hound-Fish, or Morgray, the *Pesce Gotto* of the Italians, and the *Catulus Minor* of classical writers: however, Artedi distinguishes it from the other species only by the appellation of the *squalus* with a variegated back and the ventral fins concreted. See **CATULUS** and **SQUALUS**.

HOWLET. A bird of the owl kind, so called from it's mournful, howling voice. It is as large as the pullet, and measures eighteen inches to the extremity of the tail. The head, back, wings, and tail, are cinereous, speckled with white and black spots; the head is large, round, and thick of feathers; and the wings reach to the extremity of the tail.

HOWLET OF GESNER. This variety is larger than the hen; the colour is a mixture of red and black; between the eyes and on the back there are some cinereous feathers; and the legs are whitish with livid-coloured spots.

HUBARI. The name of a bird frequently mentioned by Arabian authors; and described as being somewhat larger than the goose, with very short wings in proportion to it's bulk. It is said to be common round Damascus, and to afford much diversion to the Syrian fowlers. It is probably of the bustard kind; but we are not furnished with accounts sufficiently explicit to pronounce with certainty on this subject.

HUCK. An appellation sometimes given to the German river-trout. It bears a strong resemblance to the common trout in shape, but it's back is covered with an infinite number of black spots. It's sides, which are red, contain a few black spots; it's under-jaw has also some spots; but the rest of it's head is entirely of one colour.

HUITINGO POLLACHIUS. A name sometimes given to the fish commonly known in England under the appellation of the whiting pollack. It nearly resembles the whiting in shape, but is much larger, broader, and thinner; and it is distinguished from the cod by the smallness of it's head, the broadness of it's body, and being destitute of a beard. This fish, which is common in the northern seas, is much esteemed for the table.

HUMBLE BEE FLY. A class of Flies comprehending various species of different sizes, but all agreeing in the great resemblance they bear to the Humble Bees of the smaller or middle-sized kinds. At first view, they might naturally enough pass for real Humble Bees; but, on a closer examination, it will appear that they are destitute of trunks, and furnished with only two wings: however, the species of the Humble Bee Fly are many of them different genera from each other, some of them having trunks, and others distinguishable mouths.

Nature has assigned the worms produced from these Flies a very singular habitation: they are lodged in the intestines of horses, or under the thick and firm skins of oxen. In the latter case, the worm hatched from the egg of it's parent Fly, deposited there, forms a tumour which furnishes it with

H U M

with food and habitation; and in the middle there is an aperture for the purpose of respiration.

However, nature has not invariably decreed that all the worms of the Humble Bee Flies should feed on animal substances; for we find some delighted with vegetable food, and particularly one species that shews a strong predilection for the bulbous roots of flowers.

HUMISUGA. An appellation given to a species of fly, from it's supposed quality of subsisting on the juices of the earth, without taking in any solid food. It's body is brownish, or dun-coloured; there is a white spot at the insertion of the wings, and another on the head; the legs are black; the back is marked with four dull white longitudinal lines; and the wings, which exhibit a luminous appearance when put into water, are of a silvery whiteness. This insect is common about pathways, on mole-hills, and in other places where the ground has been recently stirred.

HUMMING-BIRD. A very beautiful genus of American birds; the distinguishing characters of which are, that the beak is of a subulated figure and as fine as a thread, longer than the head, and terminating in a fine tube or pipe, the upper mandible forming a kind of sheath for the lower; that the tongue is filiform, and rendered tubular by the junction of two threads; and that the feet are formed for walking.

Linnaeus enumerates twenty-two species of this genus, from the size of a small wren down to that of a humble-bee: and an European might be tempted to believe a bird so extremely minute as not to exceed a common bee in magnitude, to be a creature of the imagination only, were it not as frequently seen in America as butterflies in summer, sporting among the flowers, and extracting their sweets with it's little bill.

It is almost inconceivable how much these numerous, minute tribes, add to the high finishing and beauty of a rich luxurious Transatlantic landscape. As soon as the sun is risen, Humming-Birds of different kinds are seen fluttering about the flowers, without ever settling on them. Their wings are in such rapid motion, that it is impossible to discern their colours but by their effulgence. They are incessantly shifting from flower to flower, and drawing out their mellifluous juices: for this purpose they are furnished with forked tongues, which entering the cups of the flowers, extract their nectareous stores, the sole subsistence of these animals. The quick movement of their wings produces a kind of humming noise; and from this circumstance they derive their name.

These birds build their nests after a very singular manner: they suspend them from the extremities of twigs of the orange, the pomegranate, or the citron-tree; and sometimes even from the houses of the natives, provided they can find convenient twigs for that purpose. The female performs the office of an architect; while the male goes in quest of materials, such as cotton, fine moss, and the fibres of vegetables: of these substances a small nest is composed, admirably contrived, and warmly lined with cotton; in which the hen lays two eggs, each about the size of a small pea, and as white as snow, except a few brown specks. The male and the female perform the business of incubation by turns: but the latter appropriates to herself the greatest share of attention; she seldom quits her eggs, except for a few minutes in the morning; and again in the evening, when the flowers are co-

H U M

vered with the choicest dews. During this short interval the male takes her place; for as the eggs are so very small, if they were at all exposed to the weather, their contents would probably be injured.

The season of incubation continues twelve days, at the expiration of which the young brood appear, each nearly about the size of a blue-bottle fly: at first they are quite naked; by degrees they become covered with down; and at last feathers succeed, but much less beautiful than those which appear after the first molting.

Father Labat informs us, that one of his associates in the mission to America found a nest of young Humming-Birds in a shed near his dwelling-house, which he took in at a time when they were about fifteen or twenty days old. He then placed them at his chamber window, that he might be amused by their sportive flutterings; but was soon surprized to see the old ones come and feed their brood regularly every hour in the day. By these means they themselves soon grew so tame, that they seldom quitted the chamber, and at last continued to live entirely with their young. All of them frequently perched on their master's hand, chirruping as if they had enjoyed perfect liberty. He fed them with a very fine paste, composed of wine, biscuit, and sugar; into which they thrust their tongues till they were satisfied, and then fluttered and chirruped about the room. 'I never beheld any thing more agreeable,' says Labat, 'than this lovely little family, that had taken possession of my companion's chamber, and that flew out and in at their pleasure, but were ever attentive to the voice of their master when he called them. In this manner they lived with him upwards of six months; but, at a time when he expected to see a new colony formed, he unfortunately forgot to tie up their cage to the ceiling at night, in order to preserve them from the rats; and in the morning he had the mortification to find them all destroyed.'

On the continent of America these birds continue to flutter all the year round, their food never forsaking them in those genial climates where they abound; but those of the Antilles, when the winter season approaches, retire, and, as some say, continue in a torpid state during it's severity. At Jamaica and Surinam, however, where the flowers retain a perpetual verdure, these elegant birds are never known to disappear.

It is doubtful whether these birds have one continued note in singing. All travellers agree that, besides the humming noise produced by their wings, they have a low interrupted chirrup; but Labat asserts, that they have a most pleasing solemn melody in their notes, though weak, and proportioned to the organs which produce it.

The plumage of the Humming-Bird was formerly in high estimation among the Indians, as an ornament for their belts and head-dresses. Their children take these birds in the fields, on rings besmeared with a viscid substance. They approach the places where the little creatures are flying, and twirling their rings in the air, so allure them, either by their colour or sound, that the simple animals perch on them, and are detained. They are then instantly killed, gutted, and suspended in chimneys, in order to dry. Those who take the greatest care of their feathers, dry them in stoves, which is generally found a better method of preserving their beauty. The highest ranks of savage nobility formerly valued themselves on the ornaments

H U M

ornaments derived from these birds; but at present they rather catch them for sale to the Europeans than as decorations for themselves. Even among the Americans, the taste for such finery is beginning to grow obsolete; for they now adopt, if not the dresses of the Europeans, at least the materials of which they are composed.

HUMMING-BIRD, RED, LONG-TAILED; the *Trochilus Ruber* of Linnæus. This is one of the largest and most beautiful species of the whole genus. The bill is long, slender, incurvated, and black; the head and upper part of the neck are of the same colour, but glossy; the throat is a most splendid green, reflecting the colour of gold; and below this there is a black semilunar line, parting it from the breast, which is rosaceous. The back and covert-feathers of the wings are red, somewhat inclining to orange; the quills are of a dull purple colour; the tail contains two long feathers, which are also purple; the side-feathers of the tail are a reddish orange; the lower part of the back, the rump, and the coverts of the tail, are of a fine green hue; and the legs and feet are black.

HUMMING-BIRD, LITTLE BROWN; the *Trochilus Pella* of Linnæus. This species, which is a native of Surinam, is extremely minute. The bill is long, slender, and incurvated; the upper mandible, which is longer than the nether, is of a dark or black colour; and the lower mandible is flesh-coloured towards the base, and black towards the tip. The top of the head is of a dirty brown hue; the throat, the sides of the head, the neck, the breast, and the belly, are of a bright bay or dirty orange-colour; under the eye there is a dark brown or black stroke; the back and the upper part of the wings are of a dull brown colour intermixed with a bright yellow; the quill and tail-feathers are a dirty purple; and the legs, feet, and claws, are black.

HUMMING-BIRD, LONG-TAILED, GREEN; the *Trochilus Forficatus* of Linnæus. This bird is a native of Jamaica. The tail is very long and broad in proportion to the body; the bill is slender, straight, long, and blackish; the crown of the head is blue; the quills are of a dirty purplish colour; the coverts of the wings are green; the lower belly and coverts under the tail are white; the thighs are dusky; the tail-feathers are of the most vivid beauty, appearing sometimes of a shining blue colour, at others greenish, and sometimes an assemblage of all the most beautiful tints imaginable. The entire plumage of the body possesses something of a shining golden lustre; and the legs, feet, and claws, are black.

HUMMING-BIRD, LONG-TAILED BLACK CAP; the *Trochilus Polytmus* of Linnæus. The tail of this species is remarkably long; the two long feathers are of a loose, silky texture, and easily rustled; the bill is thicker at the base than most of the kind, pretty long, a little incurvated, and of a yellow colour, with a black point; the crown of the head, and the beginning of the neck behind, are black, with a blueish gloss; the throat, breast, and belly, are covered with green feathers inclining to blue, and of such a beautiful surface, that they reflect the light like burnished gold; the plumage on the back is of a yellowish green hue, without any remarkable lustre; the wings are a brownish purple, in some lights exhibiting a blueish purple cast; and the tail is black or dusky, the feathers increasing in length from the middlemost to the most extreme but one, which is five times the length of

H U M

the rest. This bird, which was imported from Jamaica, was first described by Edwards.

HUMMING-BIRD, WHITE-BELLIED; the *Trochilus Mellivorus* of Linnæus. This species is a native of Surinam. The bill is pretty long, straight, and slender, the points of the upper and lower mandible inclining a little towards each other; the whole head and neck are of a fine blue colour; the back, rump, and lesser covert-feathers of the wings, are a lively green; at the bottom of the neck behind there is a white mark in the shape of a crescent, the horns pointing upwards; the belly is white; the wings are copper-coloured inclining to purple; the middle feathers of the tail are green; the sides are white; and the legs and feet are of a blackish colour. The colours of this bird, as is common indeed to the genus in general, seem intermixed with fine golden threads, which add to it's brilliance when viewed in the sun-beams.

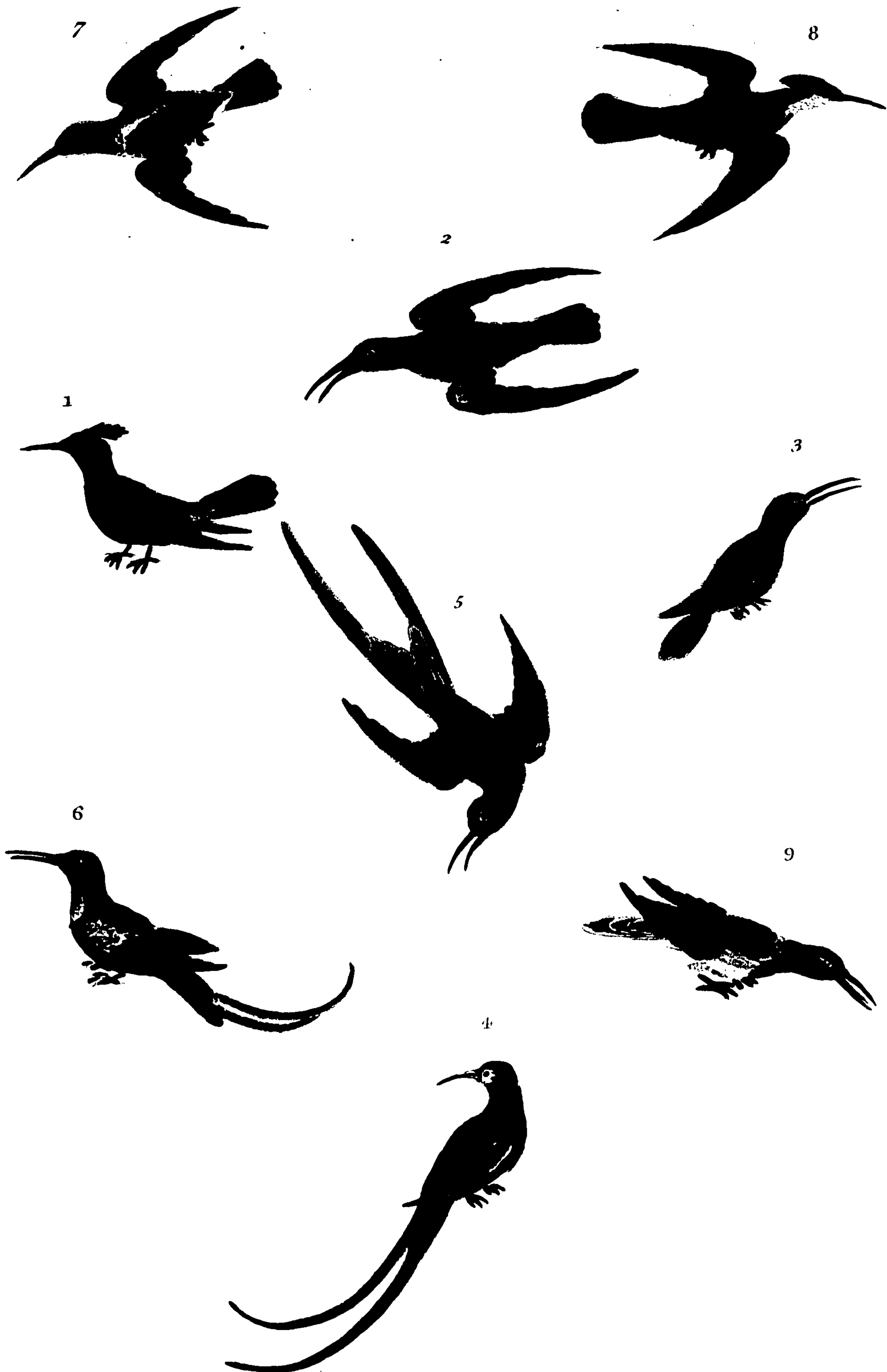
HUMMING-BIRD, GREEN, BLACK-BELLIED; the *Trochilus Holocericeus* of Linnæus. This bird is pretty large for it's genus: the bill is long, slender, incurvated, and black; the head, neck, back, and lesser coverts of the wings, are of a blueish green colour; the scapulars have something of a red intermixed with the green; the breast, and the covert-feathers of the tail both above and beneath, are blue; the middle of the belly is black; the quill-feathers are of a dirty purplish tinge; the tail is black above and blue beneath; and the legs and feet are black.

HUMMING-BIRD, CRESTED; the *Trochilus Cristatus* of Linnæus. This bird is a native of the West Indies: the bill is slender, sharp-pointed, incurvated, and blackish; the top of the head, from the bill to the hinder part, which terminates in a crest, is partly green and partly blue, both which colours shine with a lustre surpassing polished metal; the plumage on the upper part of the body and wings is a dark green intermixed with gold-colour; the breast and belly are of a dark, dirty, grey colour; the quills are purplish; the tail is a blueish black, somewhat glossy on the upper side; and the legs and feet, which are very small, are blackish.

HUMMING-BIRD, RED-THROATED; the *Trochilus Colubris* of Linnæus. Catesby, in his History of Carolina, first figured and described this species, which is a native of Carolina, and during the summer is found as far north as New England. The bill, with respect to shape and colour, resembles the genus in general; the upper part of the head, the neck, back, and lesser coverts of the wings, are of a fine glossy dark green hue, seemingly intermixed with threads of gold; the prime-feathers of the wings are a dirty purple; the tail is purple, except the middle feathers, which are green; the middle of the belly, and the covert-feathers under the tail, are white, and the throat is of a beautiful red hue, but varying according to the position in which it is viewed.

HUMMING-BIRD, LEAST; the *Trochilus Minimus* of Linnæus. This very minute species weighs only about twenty grains: the bill, and the whole upper side of the head, neck, body, wings, and tail, are of a dirty brown hue, but in the sun exhibit a gloss of a golden green colour; the underside of the head, neck, and belly, are a dirty white; and the legs and feet are black. This bird, which is a native of Jamaica, was first noticed by Sir Hans Sloane.

HUMMING-BIRD, RUBY-CRESTED; the *Trochilus*



1. CRESTED HUMMING BIRD 2. GREEN BLACK-BELLIED HUMMING BIRD. 3. LITTLE BROWN HUMMING BIRD.
 4. LONG-TAILED BLACK CAP HUMMING BIRD 5. LONG-TAILED GREEN HUMMING BIRD 6. RED LONG-TAILED HUMMING BIRD
 7. RED-THROATED HUMMING BIRD 8. RUBY CRESTED HUMMING BIRD 9. WHITE-BELLIED HUMMING BIRD

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chilus Elatus of Linnæus. The bill of this species is of the common structure and colour; the crest or crown, which is of a fine red or flame-colour, possesses the lustre of the ruby; the throat resembles burnished gold, changing in some positions to an emerald green; the body, and the coverts of the wings, are of an obscure brownish olive hue, the quills inclining a little to purple; the tail-feathers are of a cinnamon tinge, with black tips; the lower belly, and the coverts beneath the tail, are of the same colour with the tail; and a white line crosses the middle of the belly. This beautiful little bird, which is a native of Guiana, was first described by Edwards.

HUMMING-BIRD, GREEN; the *Trochilus Melifugus* of Linnæus. The bill of this bird is long, black, and slender; the head, neck, and whole body, are of a lively green colour, blueish and glossy on the upper side; the coverts of the wings are somewhat yellowish; the quills are of a brownish purple hue; the tail is a dark blue; and the legs and feet are black.

HUSO. A large fish of the sturgeon or accipenser kind, without tubercles, caught in the Danube, Boristhenes, and other large rivers. It is furnished with a very long snout, under which there are either four or eight beards; and it has one dorsal fin placed near the tail, and two pair under the belly. In it's general shape, it bears a pretty strong resemblance to the pike; it's back is black, and it's belly yellow; it has thirteen dorsal and forty-three caudal scales; and is supplied with cartilages instead of bones. This fish sometimes grows to the length of twenty-four feet, and frequently weighs four hundred pounds. It is a gregarious animal, swimming always in shoals; and is caught in great abundance about the months of October and November. It's flesh is not much esteemed; but the fish itself is extremely valuable on account of the drug called isinglass, and that luxury known by the name of caviar; which are both prepared from it. See **ISINGLASS FISH.**

HYÆNA; the *Canis Hyæna* of Linnæus. This animal, which belongs to the dog kind, is about the size of the wolf, and resembles that creature in the shape of it's head and body: however, the head is somewhat broader, and less pointed; and the ears are longer. The hair on the body is long, coarse, rough, of an ash-colour, and marked with long black stripes from the back downwards; and the neck is furnished with an upright mane. The tail is very thick of hair, sometimes plain, and at others barred with black; and immediately under it, above the anus, there is an opening into a kind of glandular porch, which separates a substance of the consistence, though not of the odour, of civet: and this aperture probably gave rise to the erroneous opinion of the ancients, who asserted, that the Hyæna was every year alternately male and female.

This creature, which is more savage and untractable than any other quadruped, is continually in a state of rage or rapacity; ever growling, except when receiving it's food: it's eyes then glitter, the bristles of it's back are erected, and it's teeth appear; all giving it a most frightful aspect, which is still farther heightened by it's dreadful howling, that sometimes resembles the voice of a human creature in distress; and hence the ancients have amused us with fabulous accounts of it's counterfeiting those accents purposely to attract

H Y M

the notice of unwary travellers, and then to destroy them.

The Hyæna, indeed, in proportion to it's size; is the most terrible of all quadrupeds: nor does it's courage fall short of it's ferocity; it defends itself against the lion, is a match for the panther, and frequently vanquishes the ounce. However, it is an obscure and solitary animal; and chiefly inhabits Asiatic Turkey, Syria, Persia, and Barbary. It resides either in the caverns of mountains, in the cliffs of rocks, or in subterraneous dens which it has formed for itself. Though taken ever so young, it seems utterly incapable of being tamed; it is ferocious without generosity, and cruel from innate principle. Like the jackall, it violates the repositories of the dead, and greedily feasts on the putrid contents of the grave. Like it, too, it preys on the flocks and herds; and, when destitute of other food, will eat the roots of plants, and the tender shoots of palm-trees.

When the superstitious Arabs kill a Hyæna; they carefully bury the head, lest it should be applied to magical purposes, as the neck was of old by the Thessalian enchantress. Nor is it at all wonderful that an ignorant Arab should attribute to the remains of this animal a supernatural power, when even the most enlightened among the ancients believed that it changed it's sex; and that it had a power of charming the shepherds, and, as it were, of rivetting them to the very spots where they stood. Some likewise have reported, that this creature changed the colour of it's hair at will; others, that a stone was found in one of it's eyes, which, when put under a man's tongue, endued him with the gift of prophecy; some, that it's neck was destitute of joints; and others, that it's very shadow restrained dogs from barking. Such are the absurdities which have been propagated concerning this formidable animal; and such probably have originated from the ferocity of it's nature, and the principle of fear in the human breast, which always conjures up imaginary terrors, and adds horror to what is only dreadful.

HYÆNA, SPOTTED. This species, which inhabits Guinea, Ethiopia, and the Cape of Good Hope, possesses the nature and qualities of the common Hyæna, but is considerably larger and stronger. The head is large and flat; the whiskers are extremely long; the mane is short and black; the hair on the body is short and smooth; and the ears, which are short and pointed, are internally cinereous, and externally black. The face is black; the body and limbs are of a reddish brown hue, and marked with distinct round black spots; the hind-legs are barred transversely with black; and the tail is short, black, and hairy.

HYDRA. See **NATRIX.**

HYDROCHÆRIS. The Linnæan term for a species of the hog genus found in Surinam. See **CAPYBARA.**

HYDROCORAX. A name given by some authors to the *Corvus Indicus.*

HYMENOPTERA. In the Linnæan system, an order of insects having four membranaceous wings; and the tails of the females being furnished with stings, which in some are used for infilling poison, and in others merely for piercing the bark and leaves of trees, in order to deposit their eggs. To this class belong ten genera, the cynips, leucithredo, firex, ichneumon, spheg, chrysis, vespula, apis, formica, and mutilla, comprehending a considerable

siderable number of subordinate species. This term is derived from Ymen, a Membrane; and Pteron, a Wing.

HYPNOTICUS SERPENS, the Sleep Snake. An East Indian species of serpent, called by the

Ceylonese Nintipolong, a word importing the same meaning. It is of a deep blackish brown colour, variegated with white spots; and its poison, which is extremely subtle, always brings on a sleep that terminates in death.

I.

JABIRU. A large aquatic bird of the crane kind, by some called the Negro. It is a native of Brazil, and was first described by Marcgrave. It is somewhat larger than the swan; the head is large; the neck is thick; the beak is long and straight; and the legs, which are two feet long, are thick and scaly. The body is entirely white; the neck and head are naked, and covered with a thick black skin instead of feathers; and the tail is broad and short.

JABIRUGUACU. A Brazilian bird, called also Nanduapoa; and by the Dutch, Scurvogel.

JABOTI. An American species of tortoise; the shell of which is black, marked with numerous hexangular spots; and the head and legs are brown, variegated with spots of a dusky greenish hue.

JACAMACIRI. A Brazilian bird about the size of the lark, with a straight, sharp-pointed, black bill, near two inches long. It approaches to the nature of the woodpecker tribe, having feet of a similar shape with those of that genus; but its tongue is short, in which particular it differs from all other woodpeckers. Its whole head, neck, wings, back, and tail, are green, variegated with yellow and red; its breast and belly are of a dusky yellow hue; and there is a white space under its bill.

JACANU. A Brazilian bird of the moor-hen genus: it is about the size of the pigeon, but its legs are considerably longer, and of a greenish colour; and all its toes, particularly the hinder one, are remarkably long. The back, belly, and wings, are an admixture of green and black; the neck and breast are of the most beautiful pavonaceous colours; the head is small, and covered with a torquoise-coloured membrane; the beak is shaped like that of the gallinaceous kind, partly greenish and partly red; and the tail is extremely short. This bird frequents marshy places; and its flesh is esteemed by the Brazilians.

JACAPU. A bird of the merula kind, about the size of the common blackbird. The whole upper part is of a deep black colour, except that the tips of the feathers which cover the rump are greyish; the breast is of a very fine red hue; and the tail is long and black.

JACARE. A Brazilian animal of the crocodile or alligator kind, not specifically differing from that formidable tribe. It has no tongue; its eyes are large, round, and very bright; the iris is blue; and the pupils are a fine black. The fore-legs are short and slender, the hind ones are longer and more robust; the fore-feet have five toes, the hinder only four, and the farther part of the tail is furnished with a strong erect fin, which remarkably assists the creature in swimming.

JACARINI. A Brazilian bird of the fringella kind, nearly about the size of the common goldfinch. The bill, which is pretty thick, is greyish, of which colour also are the legs and feet; the body is wholly of a fine shining black hue like polished metal, reflecting green and blue; and the under-sides of the wings are white.

JACK. A provincial appellation for the pike. See **PIKE**.

JACK-DAW; the *Corvus Monedula* of Linnaeus. This very common bird has a large head in proportion to its body; the hind-part of the head is of a fine light grey colour; the breast and belly are dusky inclining to cinereous; the body is black, slightly glossed with blue; the feet and bill are black; and the claws are very strong and hooked.

The Jack-Daw, which is docile and loquacious, breeds in steeples, old castles, and high cliffs; lays five or six eggs; and feeds on insects, seeds, and grain. Indeed, so very voracious is this bird, and so thievish in its disposition, that it generally carries off much more than it can devour. It is extremely injurious to farmers and gardeners, and therefore constantly proscribed. In some parts of England it is caught by the following device: A stake, about five or six feet in length, is firmly driven into the ground, and the point rendered so sharp, that the Jack-Daw cannot rest on it. A hole, about three-quarters of an inch in diameter, is made in the stake, within a foot of the top; through which a stick, about eight inches long, is put: then a horse-hair spring or noose is fastened to a thin hazel wand; and this is brought up to the place where the short stick is situated, and carried through the hole along with it, the remainder being left open under that stick. The other end of the hazel rod is put through a hole in the stake near the ground, and fastened there. This being done, the stake is planted among such food as Jack-Daws are generally fond of: the bird naturally endeavours to rest on it; but finding the point too sharp, he descends to the little cross stick, which sinking with the weight, the spring receives his leg, and holds him fast.

JACK-SNIPE; the *Scolopax Gallinula* of Linnaeus. This bird is about half the size of the common snipe, and on that account has sometimes received the name of the Half-snip. The crown of the head is black, tinged with ferruginous; there is a yellow line over each eye; the neck is variegated with white, brown, and pale red; the fore-legs are long, narrow, and brown, bordered with yellow; the rump is of a glossy bluish purple hue; the belly and vent are white; the tail, which is brown edged with tawny, consists of twelve pointed feathers.

feathers; and the legs are of a cinereous green colour.

This bird frequents the same places, and delights in the same sort of food, as the common Snipe; but it is more sluggish in it's motions, and seldom attempts a distant flight: it will suffer a person to come almost close up to it before it will rise; and therefore affords excellent diversion to the fowler.

JACKALL; the *Canis Aureus* of Linnæus. This animal is vulgarly termed the lion's provider, from an opinion that it rouses that animal's prey. However, the truth is, that every creature in the forest is set in motion by the cries of the Jackall: the lion, and other beasts of rapine, attend the chase by a kind of instinct, and seize those timid animals that betake themselves to flight at the noise of this nocturnal pack.

Though the Jackall is one of the most common wild beasts of the East, there is scarcely any quadruped less known in Europe, or more imperfectly described by naturalists. It is said to be of the size of the common fox, and to resemble that animal in it's hinder parts, particularly the tail; and the wolf in it's fore-parts, especially the nose. It's legs are shorter than those of the fox; and it's colour is a bright yellow.

These animals are natives of all the hot and temperate parts of Asia; and are found in Barbary, and other countries of Africa, as low as the Cape of Good Hope. There seems to be several varieties among them: those of the warmer climates appear to be the largest; and their colour partakes more of a reddish brown than of that beautiful yellow by which the smaller Jackalls are distinguished.

The Jackall seems to be placed between the wolf and the dog; and to possess the ferocity of the former, and the familiarity of the latter. It's voice is a howl mixed with barking, and a lamentation resembling that of human distress; and, in it's pursuits, it is more noisy than the dog, and more voracious than the wolf. Jackalls always hunt in packs of forty or fifty together; and unite regularly every day, in order to form a combination against the other inhabitants of the forest. Nothing can escape them; they satisfy their appetites with the smallest animals; and yet, when thus united, have sufficient courage to face the largest. They seem to be under little apprehension from mankind; but pursue their game to the very dwellings of the natives, without testifying either attachment or suspicion. They boldly enter their folds, yards, and stables; and, when they can find nothing better, devour leather harness, boots, and shoes; and frequently carry off what they have not time to consume. They not only attack the living, but also the dead: they search up new-made graves with their feet, and devour the most putrid corpses; and, in those countries where they abound, it is absolutely necessary to beat the earth over the grave, and to mix it with stones, in order to prevent the Jackalls from snuffing it away.

These creatures always attack each other, as well in the employment of exultation, as in that of the chase. While engaged in this dreary work, they encourage each other by a loud cry, resembling that of children under a new bonny; and, when the body is dug up, they fling themselves about among themselves. Like all other savage animals, when once imbued with human blood, they never can refrain from pursuing mankind afterwards: they

watch the dormitories of the dead, mark the progress of armies, and close the rear of caravans. In short, they may be considered as the vultures of the quadruped kinds; every thing that once possessed animal life seems equally grateful to them; the most putrid substances are eagerly devoured; and the most insipid morsels are added to complete the repast.

The Jackall hides itself by day in some hole, seldom venturing abroad before the night commences. When it has fallen on the scent of any larger animal, it gives notice to it's associates by a kind of howl, which it repeats as it runs; while all the Jackalls within hearing pack to it's assistance. The chase is sometimes long and warm; the creature pursued frequently takes shelter near the abodes of men; and thus the Jackalls are often disappointed when they expect an immediate booty. But man is not the only enemy that opposes the Jackall's industry and success: the lion, the tiger, and the panther, whose appetites are superior to their swiftness, attend to it's call, and follow in silent expectation at a small distance behind. After the Jackall has perhaps tired down it's prey, and is just about to participate of the fruits of it's labour, the lion, or the leopard, comes in, satiates himself on the spoil, and leaves only the scanty remains to the famished hunter: hence it is not strange that the Jackall is extremely voracious, since it seldom has a sufficiency; nor that it preys on putrid substances, since it is not permitted to feast on what is recently killed.

Besides these enemies, this creature has still another to contend with; namely, the dog, between whom and the Jackall there exists such an irreconcilable antipathy, that they never meet without an engagement. The Indian peasants often chase Jackalls in the same manner as the Europeans pursue foxes; and have learned by experience to distinguish when they have got a lion or a tiger in their rear: on such occasions they keep their dogs close, and endeavour to put these furious animals to flight by their cries. When the lion is dismissed, the Jackalls are more easily vanquished; the dogs overtake them in their career; and, by the assistance of their masters, generally destroy some of them.

Wild as the Jackall naturally is, Dallon informs us, that it is capable of being tamed, and is sometimes kept among domestic animals.

Linnæus mentions an animal of this kind, about the size of a large cat, which inhabits Surinam. The tongue is fringed on the sides; and on the cheeks, above the eyes, and under the throat, there are numbers of warts. The upper part of the body is of a greyish colour, and the lower white, and there are five toes before, and four behind.

JACOBINE; the *Columba Cypria Cucullata* of Moore. This species of pigeon, when of the genuine breed, is the smallest of any. It has a range of feathers, inverted quite over the hinder part of the head, and reaching down on each side of the neck to the shoulders of the wings, which forms a kind of hood, and gives the bird it's official name. The colours of the plumage are various, being a mixture of red, yellow, blue, black, and mottled; but whatever is the general colour, the head, tail, and feet, are always white. Some varieties are feathered down to the toes, and the legs of others are bare.

JACULATOR, the *Clupeon Rallus* of Linnæus. This fish has an erect, bony spine in the dorsal fin, a broad crown of bony scales

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an eye, and a cylindric snout. It is a native of India, and derives its name from the manner in which it collects its food: for this purpose it frequents the shores and sides of the sea and rivers; and when it spies a fly on any of those plants which grow in shallow water, it swims on to the distance of a few feet, and then, with surprising dexterity, ejects out of its tubular mouth a single drop of water, which never fails to precipitate the insect into the sea or river, where it becomes an easy prey.

JACULUM. An appellation given to the serpent more frequently called the *aconias*, found in the island of Rhodes, and some other places. See *ACONTIAS*.

JACUPEMA. A Brazilian bird of the pheasant kind, about the size of the common European hen. It receives its name from its note, which is a repetition of the word *Jacu*. Its flesh is reckoned extremely delicate; and it is easily domesticated.

JAGUACATI-GUACU. A Brazilian bird of the halcyon kind, called by the Portuguese *Papa Peéxe*. It is about the size of the thrush; and its colours have a strong resemblance to those of the common king-fisher.

JAGUAR. An animal of the feline kind, of a bright tawny colour. The top of the back is marked with long black stripes; and the sides are impressed with irregular oblong spots, open in the middle, which is the ground colour of the hair. The thighs and legs are marked with full black spots; the belly and breast are whitish; and the tail is shorter than the body.

The Jaguar resembles the ounce in size, in the figure of its spots, and even in its disposition. It is the most formidable, as well as the most cruel animal, and in a word the tiger of the New World, where nature seems to have contracted every kind of quadruped. Like the tiger, the Jaguar lives solely on prey: but any kind of light is sufficient to intimidate it; and when its stomach is full, it so entirely loses all its courage and vivacity, as to fly before a single dog. It is neither nimble nor active, except when pressed with hunger: nevertheless, the savages, who are naturally timid, are afraid to encounter it; alledging, that it prefers them to the Europeans, whom it never attacks.

Almost all authors who have penned the history of the New World, mention this animal; some under the name of the tiger or leopard; others under its Brazilian appellation; and some have called it the *Jaguara*, or *Janouara*, one of its Brazilian titles. It is found in Brazil, Paraguay, Guiana, Mexico, the country of the Amazons, and all South America. It begins, however, to become more rare in Brazil, its native climate, than formerly: a price has been set on its head; in consequence of which numbers have been destroyed; and the rest have retired from the coasts to the more desert and interior parts of the country.

JAGUARETTE. This animal inhabits the same countries, and possesses the identical dispositions, of the jaguar; so that naturalists have been at a loss to determine whether they were two distinct species of the same genus, or only varieties of the same species. Piso and Marcgrave, the only two authors who seem to have had an opportunity of giving original descriptions of the *Jaguarette*, say that it is distinguished from the jaguar by having shorter, more bright, and differently coloured hair, which is black, and variegated with spots of a still

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deeper black. In every other particular it resembles the jaguar: and may therefore be safely fixed as a variety only of the same species; especially as Piso informs us, that in the jaguar the ground-colour of the hair, and that of the spots, vary in different individuals of the same species.

The *Jaguarette* is much less common than the jaguar, at least near the abodes of men. It keeps close to those solitudes where it can range without interruption; and prefers liberty and security to plenty accompanied with danger.

JAMACAI. A Brazilian bird, about the size of the lark: its head is small and black; its beak is a little incurvated; its throat is of the same colour with its head; the upper part of its neck is yellow; and its back, breast, and belly, are also yellow. Its wings are black, except a white spot on each; its tail is wholly black; and its legs and feet are brown. This bird makes a very elegant appearance; and, from the extreme length of its tail, it seems to be of the *motacilla* kind.

JAMBON. An appellation given by some naturalists to a kind of marine shell somewhat resembling a ham of bacon; a species of the *pinna marina*.

JAMBU. A sort of Brazilian partridge, of which there are two species. They are both of a dusky yellow colour; and their flesh is much esteemed for its delicacy and flavour.

JAPACINI. A small Brazilian bird, having a long, black, pointed beak, a little bent downwards; the head is black; the back, neck, and wings, are of a greenish brown colour mixed with black; the upper part of the tail is black, the under being spotted with white; the breast, belly, and thighs, are variegated with white and yellow; and the latter are likewise marked with transverse black streaks.

JAPU. A Brazilian bird of the woodpecker kind, called also *Jupajuba*. See *JUPAJUBA*.

JARARA-COAYPITINGA. A species of American serpent, which bears a striking resemblance to the common viper, and is equally venomous. The tail is somewhat paler than the rest of the body; and thence it receives its name, which, in the language of the natives, expresses this quality.

JARARA-EPEBA. An American serpent of a brown colour, variegated with a beautiful undulated red line running along the back like a chain.

JARARACA. A serpent very common in America, of which De Laet enumerates four species. It seldom exceeds one foot and a half in length; the head is marked with some prominent veins; and the body is of a dusky brown colour, variegated with red and black spots. This reptile is accounted very poisonous; but the natives are provided with an antidote against its effects in the root of a plant by them called *caatia*; and, by the Portuguese, *herba de cobros*.

JARARACUCU. An American serpent of the viviparous kind; and extremely prolific, thirteen young having been found in the belly of a female of this species. It grows to the length of thirty inches; and, like other poisonous reptiles, has very large and long teeth hid in the gums, containing a yellow infectious fluid: these it only exerts in the act of biting; and so deleterious is its poison, that it generally carries off the person infected in the space of twenty-four hours.

JAUNDICE-BIRD. An appellation given by some authors to the *galbula*, a bird of the *turdus*

JAY

kind, having black wings, and the body being beautifully stained with a golden tinge.

JAY; the *Corvus Glandarius* of Linnæus. The Jay is one of the most beautiful of the feathered tribes that is properly a native of Britain. The bill is strong, thick, black, and about a quarter of an inch long; and the tongue is black, thin, and cloven at the point. The forehead is white, streaked with black; the head is covered with very long feathers, which the bird can erect at pleasure; the neck, breast, back, and belly, are of a faint purple colour, dashed with grey; the covert-feathers of the wings are of the same colour; the greater coverts of the wings are most elegantly barred with a lively blue, black, and white; the tail is composed of twelve feathers; and the feet are of a pale brown colour.

The Jay lays five or six eggs of a dull white colour mottled with a pale brown. Like the magpie, it feeds on fruits; and in summer is very injurious to gardens, being a great devourer of pease and cherries. In autumn and winter it lives on acorns; and, according to Dr. Kramer, will sometimes kill small birds. Its native note is very disagreeable; but being naturally extremely docile, it is easily taught to imitate the human voice. Its length is about thirteen inches; the expansion of its wings is twenty-six; and its weight is between six and seven ounces.

JAY, BLUE; the *Corvus Cristatus* of Linnæus. The shape of this bird is not unlike that of the common European Jay, except that the tail is longer, and the feathers are of unequal lengths, those in the centre being the longest. The bill is black; and the nostrils are covered with small white hairs, reflected forwards. The top of the head is adorned with long blue plumes, which the bird can either erect or depress; the sides of the head, and part of the throat, are white, surrounded with a black line; and above each eye there is a white spot. The lower part of the neck behind, and the back, are of a blueish purple colour; the upper sides of the wings and tail are a very fine blue; and the lower part of the back and rump are of the same colour. The tail-feathers, except the two centre ones, are tipped with white, and barred with three black lines; the rest of the quills next the back, and the first row of the feathers above them, are tipped with white, and elegantly barred with black. The breast is of a brownish red colour, inclining to roseaceous, which gradually becomes white towards the belly; and the legs, feet, and thighs, are a dusky brown, and of the common form.

This bird, which inhabits Carolina, has a more harmonious note than the European Jays; and the colours of the female are nearly the same with those of the male, except that they are somewhat duller.

JAY, BLUE, EAST INDIAN; the *Corvus Indica* of Linnæus. This bird is considerably larger than the common Jay: the bill is black or dusky; the crown of the head is of a fine blueish green colour; the fore-part and sides of the head, beneath the eyes, the throat, breast, upper side of the neck, and back, are of a reddish brown hue, somewhat lighter on the throat and breast than behind; the rump and covert-feathers above the tail are of a fine blue colour, the middle feathers of the tail are green; and the outides are a beautiful blue at their bottoms and tips, and green in the middle. The lesser coverts of the wings are of an ultramarine blue colour, the first row of coverts above the

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quills is sea-green; the quills are sea-green at their bases, ultramarine in the middle, and sea-green again towards their ends; but their extreme points are a fine dark blue. The belly, thighs, and coverts beneath the tail, are a blueish sea-green; and the legs and feet are of a yellowish flesh-colour.

JAY, BUFF, OF MADRASS. This species is about the size of the common magpie. The upper part of the tail is black, except the extreme points, which are yellow; a black oblique stripe surrounds the eyes; the wings are black, with yellow points; and the other parts of the body are brownish, intermixed with dusky reddish lines.

JAY, YELLOW, EAST INDIAN. This bird is nearly of the same size and colours with the Buff Jay of Madras, except that the yellow is more faint. The breast, as low as the vent, is marked with oblique winding lines; the back and throat are yellow; and the wings, with the space surrounding the eyes, are black.

JAY, GREEN, EAST INDIAN. This beautiful bird is chiefly green, and of a very deep tinge on the back and tail. The tail is remarkable for having three points, blackish at their tips, and the middlemost the longest.

IBEX. An animal of the goat kind, inhabiting the highest Alps, the mountainous parts of Germany, and the Isle of Crete. It is extremely swift; and its chase is attended with the greatest danger. The horns, which are large, knotted, and reclining backwards, are sometimes four cubits long; the head is small; and the legs are very slender: so that this creature, though properly belonging to the goat kind, would bear a strong resemblance to the stag, were not the male furnished with a very long black beard. The tame species of goat is supposed to have sprung from this stock.

IBIBIROCA. An American serpent, called by the Portuguese *Cobra de Coral*. It is about two feet long, and two inches thick, but terminates towards the tail in a sharp point. The belly is white, bright, and glossy; the head is covered with white scales of a cubic figure; and the body is variegated with black, white, and red. This reptile is very slow in its motions, but of the most poisonous nature.

IBIJARA. An American serpent of the amphibæna kind, or those which are erroneously supposed to have two heads. The head and tail are of the same shape, and of an equal thickness; and it is said that the creature can strike equally with either, and that both contain a poisonous fluid. The body is about a foot long, and as thick as a man's finger: it is white, shining, glossy, and elegantly marked with rings and streaks of a brown or copper colour; and the eyes are so very small, as to be scarcely visible. This reptile lives under ground, and feeds on ants and other small insects: it is often thrown up in digging; and, if we may credit the Portuguese, its poison is virulent beyond the reach of every human remedy.

IBIJAU. A very beautiful Brazilian bird, of the caprimulgus or goatfucker kind, and about the size of the swallow. The head is large, broad, and flat; the eyes are black and lively; the beak is small; the mouth is enormously large; the legs are very short; the tail is broad; and the colour is blackish, spotted and variegated with white and yellow.

IBIRACOA. A West Indian serpent, of a variegated colour mottled with black, white, and

red; whose bite is highly venomous, and always attended with the most alarming effects.

IBIS. An Egyptian bird of the stork kind; to which divine honours were formerly paid by the superstitious natives, because instrumental in destroying the serpents, locusts, and other noxious insects, with which that country is over-run. Some have confounded this bird with the hæmatopus, or red-legged heron; and others have candidly owned their ignorance of what the ancients intended by the Ibis. However, according to the best-informed naturalists, it is wholly black; the beak is long, hooked, and red; the legs are of the same colour; and the neck is as long as that of the heron. It seems to be peculiar to Egypt; and though it generally frequents the vicinity of the Nile, it never trusts itself in the water, nor indeed is it adapted for swimming. It generally builds its nest in palm-trees, in order to avoid the cats. Aldrovandus relates, that the flesh of the Ibis is red, like that of the salmon; that it is sweet to the taste; and that the skin is extremely hard and tough.

IBITIN. A serpent of an uncommon size, and of the most dangerous nature, found in the Philippine Isles. It twists its tail round the trunk of a tree, and strikes either man or beast that happens to come in its way with unerring and fatal aim; after which it devours them, and squeezes itself against some tree, purposely to digest what it has eaten.

ICHNEUMON; the *Viverra Ichneumon* of Linnæus. This animal, which some authors have injudiciously denominated the Cat of Pharaoh, is one of the boldest as well as most beneficial animals of the weasel kind. In Egypt, where it is chiefly bred, it answers all the purposes of the European cat, and is even more serviceable in destroying vermin. It is usually of the size of the martin; and greatly resembles it, except that its hair, which is generally of a gristly black hue, is rougher and less downy; the tail is also less bushy at the extremity; and every single hair possesses three or four different colours, which are seen in different dispositions of its body. Under the longer hairs there is a softer fur of a brownish colour, the rough hair being about two inches long; but the legs, paws, and snout, are covered with only one sort of short smooth hair. To all the strength of the cat, the Ichneumon unites a superior share of instinct and agility, a more universal appetite for carnage, and a greater variety of powers for its acquisition. Rats, mice, serpents, lizards, and insects, are all equally the objects of its pursuit: it attacks every living creature which it is able to overcome, and indiscriminately preys on flesh of all kinds. Its courage can only be equalled by the vehemence of its appetite: it neither stands in awe of the power of the dog, the insidious malice of the cat, the claws of the vulture, nor the fangs of the viper. It wages war with all kinds of serpents, however venomous; and, whenever it begins to perceive the effects of their rage, we are informed that it has recourse to a certain root which the Indians call by its name, returns to the attack, and seldom fails of victory.

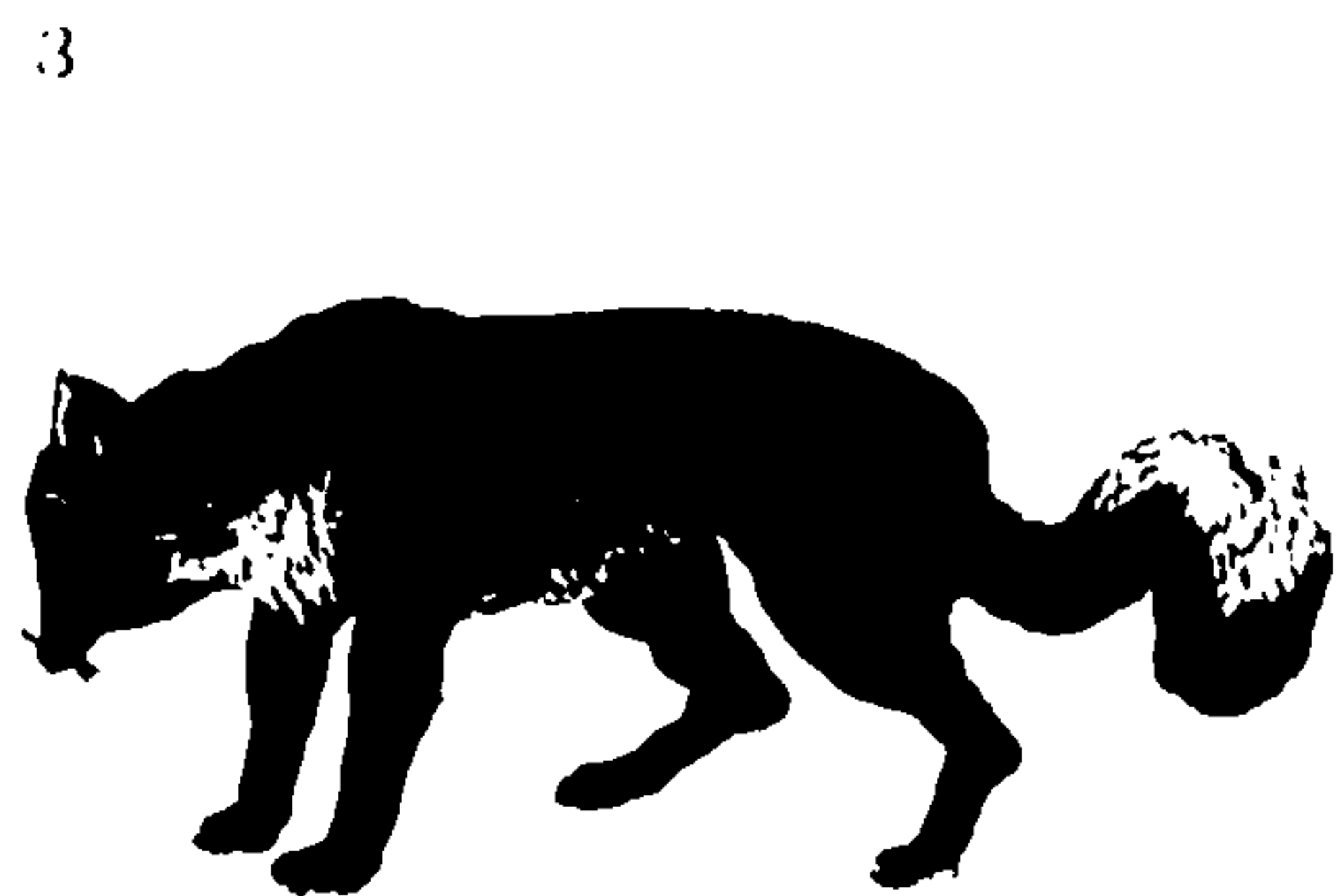
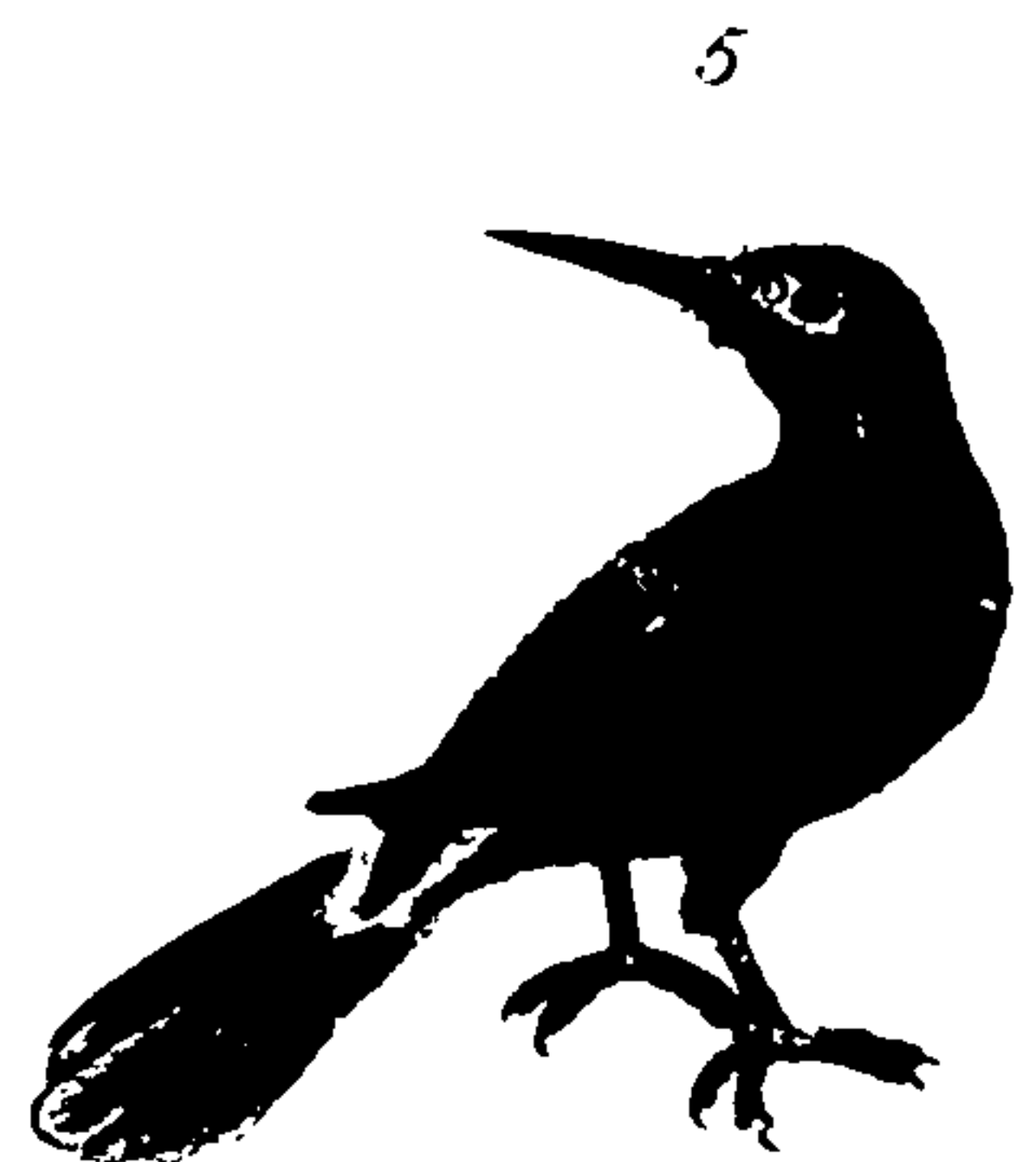
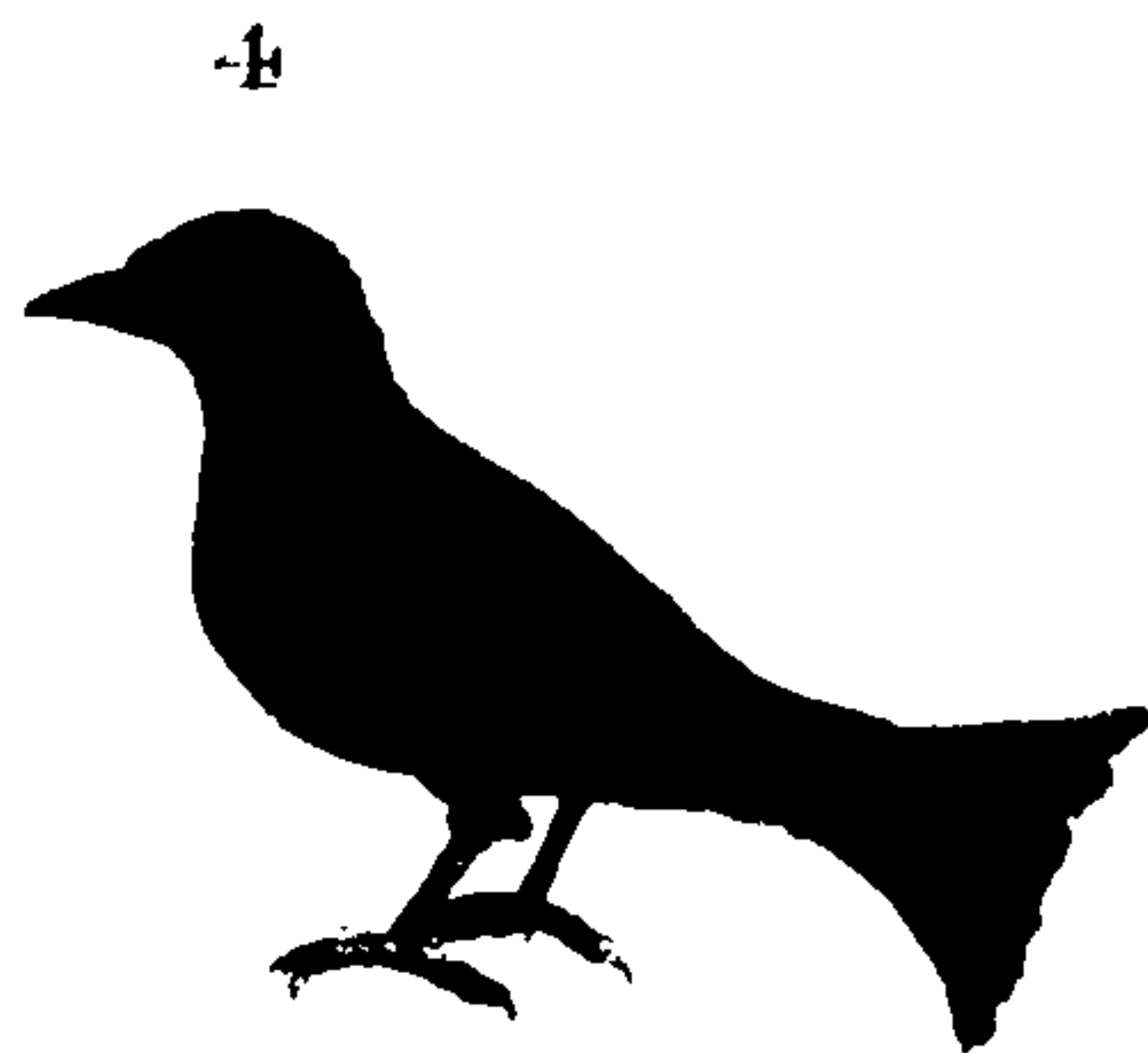
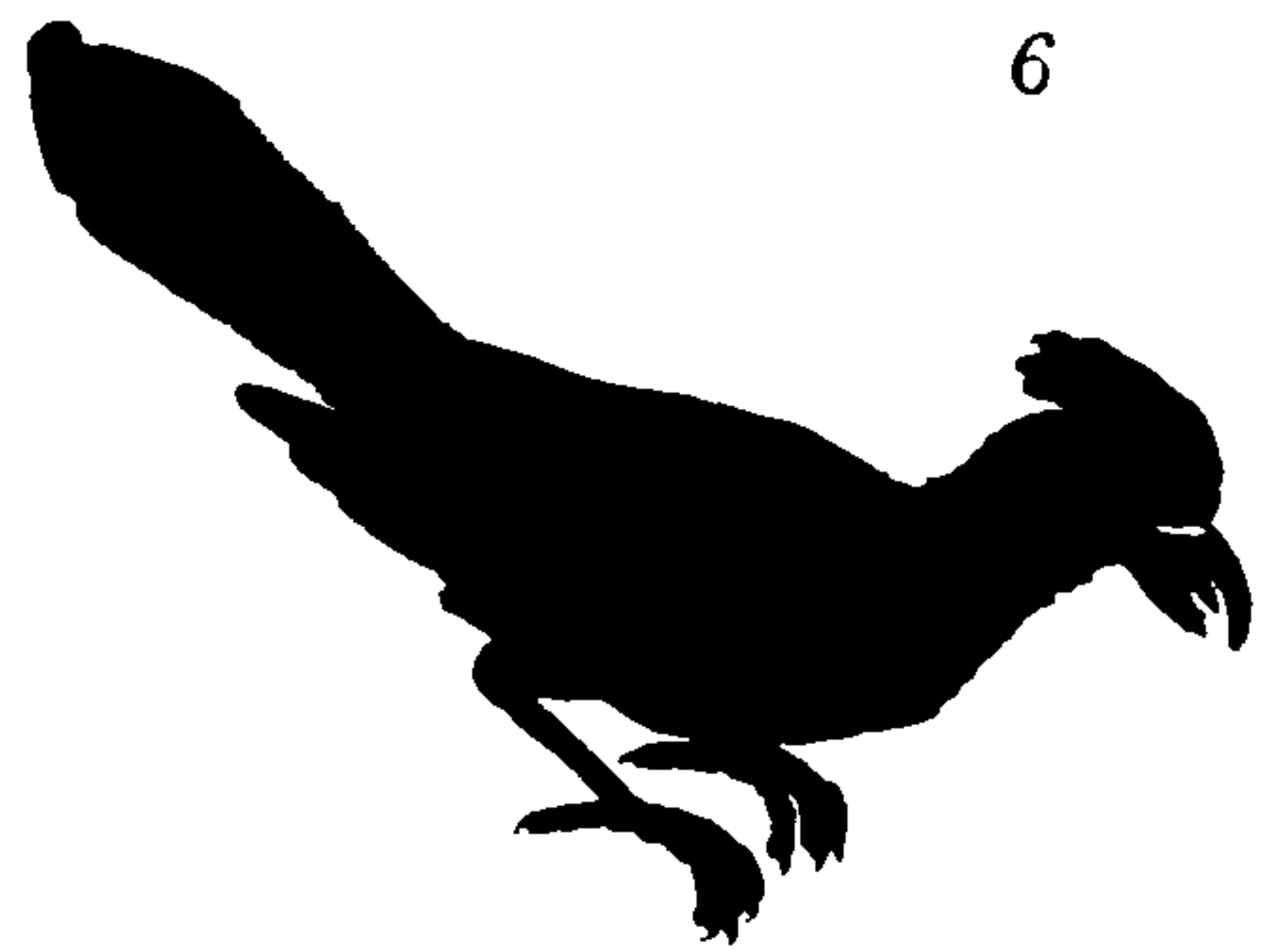
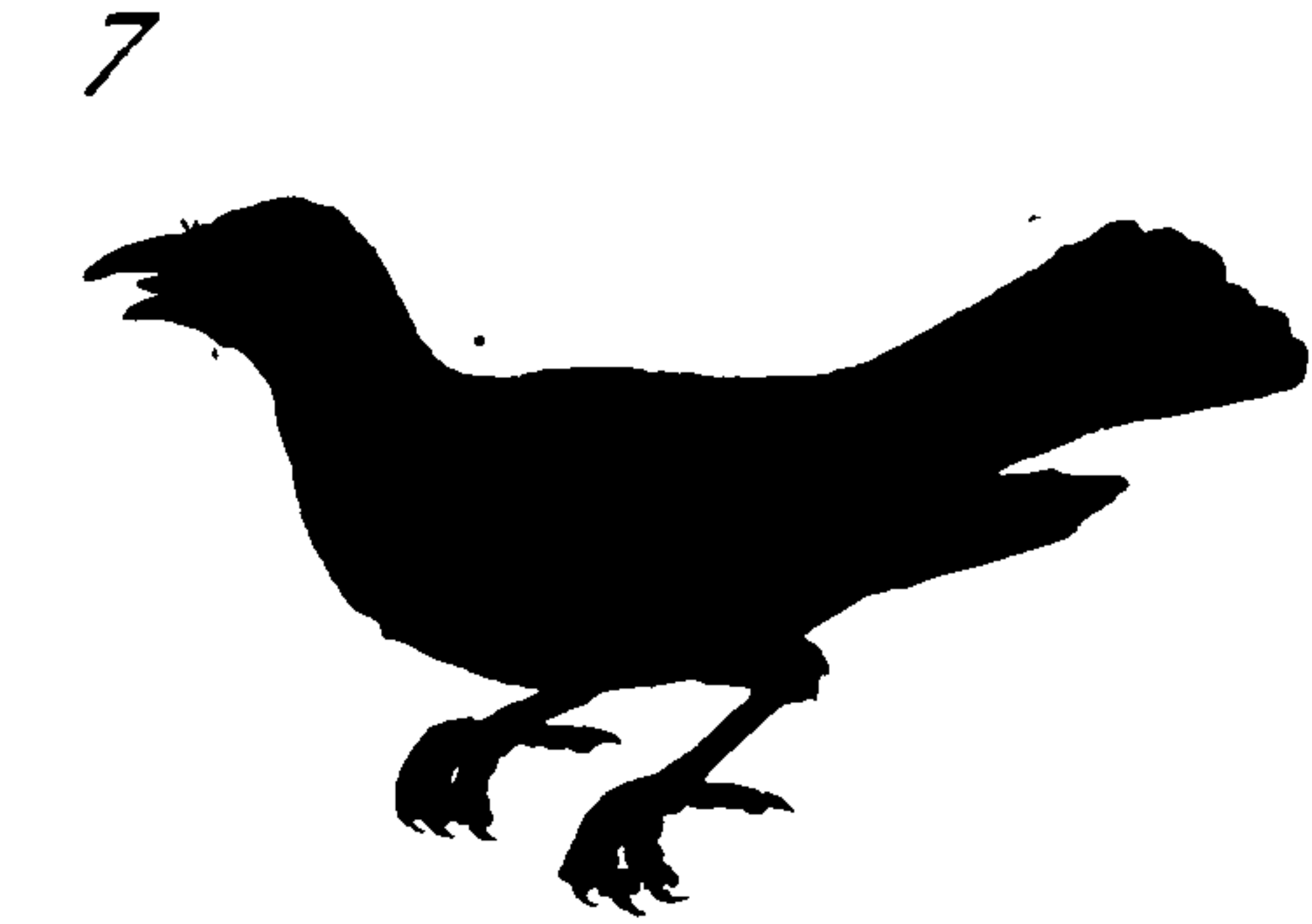
Nor does the Ichneumon usurp dominion over the smaller tribes of animals only: it kills the young alligators before they are able to reach the water; and, as fable generally magnifies acknowledged virtue, it is said to enter the mouth of the crocodile when floating on the shore, to devour its en-

trails, and eat its way out again. However this may be, it certainly is highly beneficial to the natives in destroying the eggs of that creature, which it digs out of the sand: and for this reason it was worshipped by the ancient Egyptians, who considered every thing that was serviceable as an emanation of the Deity; and paid homage to such, as the best representatives of God below. Indeed, when we consider the number of eggs which the crocodile lays at one time, we have reason to admire the utility of this little animal, as well as its industry, in destroying them; since otherwise the vast multitudes of alligators produced would be sufficient to over-run almost the whole earth.

The Ichneumon, in a state of nature, generally resides along the banks of rivers; but, during inundations, makes to the higher grounds, and often approaches human habitations in quest of prey. It advances cautiously and silently, changing its manner of moving according to its necessities: sometimes it carries its head high, shortens its body, and raises itself on its legs; at others, it lengthens itself, and creeps along the ground; and it is often observed to sit on its hind-legs like a dog, and frequently to dart with amazing velocity on its prey. Its eyes are sprightly, and full of fire; its physiognomy is sensible, its body nimble, its tail long, and its hair rough and various. Its nose is so sharp, and its mouth so small, that it cannot easily seize on large animals: however, it compensates by its courage and activity the defects of nature; it easily strangles a cat, though stronger and larger than itself; and often contends with dogs, which soon learn to dread it as a formidable enemy. Like all its kind, it is furnished with glands in its posteriors, which exude an odorous substance. It takes the water like the otter; and, according to some, can live under it for a considerable time without respiration.

As these animals soon arrive at maturity, their lives are consequently but short. They abound in all the southern parts of Asia, from Egypt to Java; and are also found in Africa, particularly at the Cape of Good Hope. In Egypt, they have been long domesticated; but, in the colder European climates, it is difficult to breed or support them: nevertheless, directed by instinct, they use every precaution for their preservation; they wrap themselves up into balls, hiding their heads between their legs; and in this manner they continue to sleep the greatest part of their time. Seba informs us, that one of these creatures was sent to him from the Isle of Ceylon, which he permitted to run for some months about the house. It proved heavy and slothful by day, and often could not be awaked even by a blow; but it made amends for this inactivity by its nocturnal diligence, snelling then about, without either being wholly tame or wholly mischievous. It climbed walls and trees with great facility; and appeared extremely fond of spiders and worms, which, from their resemblance to serpents, it probably preferred to its natural food. It was also particularly fond of scratching up holes in the ground; and this circumstance, added to its wildness and uncleanness, induced our naturalist to smother it, in order to preserve it in spirits for his museum.

ICHNEUMON, INDIAN. The Indian Ichneumon is about the size of the ferret, being about twenty-seven inches long. The nose, which is pretty sharp, is covered with short hairs of a reddish brown



1. INDIAN TIGER-CAT 2. BLACK-HEADED CUCKOO 3. ISATIS 4. JACARINI 5. JACAMACHO
6. BLUE JAY 7. EAST-INDIAN BLUE JAY 8. EGYPTIAN CAT

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brown colour; the eyes are bright and sparkling; and the ears are small, round, and so thinly covered with hair, as to disclose the colour of the flesh. The top of the head, the neck, back, sides, and tail, are cloathed with pretty long stiff hair, partly brown and partly dusky; the hair on the throat and belly is shorter, and brownish, without any mixture; the legs, which are short, are dusky or black; and there are five toes on each foot.

One of these animals was lately brought over to England. It sometimes crept on it's belly, after the manner of a serpent; and, at others, it raised it's head, and appeared to walk on it's legs, and to contract it's body. It sometimes rested on it's hinder legs; and, when incensed, erected it's bristles in a surprizing manner. It was suffered to run about the house, and was very serviceable in clearing it of rats and mice.

Edwards mentions an Egyptian Ichneumon, measuring forty-two inches, which fell under his inspection. With regard to shape and colour, it resembled the former, except that it had a small tuft of hair at the extremity of the tail; from which circumstance he seems inclined to believe that they were of a different species, though it is more probable they were only varieties of the same species.

ICHNEUMON FLY. In the Linnæan system, this is a genus of the hymenoptera class of insects, comprehending no fewer than seventy-seven species; the distinguishing characters of which are these: the mouth has jaws without a tongue; the joints of the antennæ are more than thirty; the abdomen is generally petiolated; and the sting is protruded from a cylindric bivalve sheath.

Though there are many different kinds of this insect, the most formidable, as well as the best known, is the common Ichneumon with four wings like the bee; a long slender black body; and a three-forked tail, consisting of bristles, of which the two exterior are black, and the central one is red. This fly receives it's name from the little quadruped so destructive to the crocodile, to which it bears a strong similitude in it's courage and rapacity.

The instrument with which the Ichneumon Fly is furnished, though apparently feeble and slender, is nevertheless endued with great power and efficacy: there is scarcely any substance which it cannot pierce, and it is seldom unemployed. It is the weapon of defence, as well as that of attack; and assists the female in depositing her eggs wherever she thinks proper to lay them. As it is an appendage principally employed for the latter purpose, the male is totally unprovided with it; while the female uses it with great force and dexterity, brandishing it when caught from side to side, and often wounding her captors.

All the flies of this tribe are produced in a similar manner; and owe their birth to the destruction of some other insects, within whose bodies they have been deposited, and on whose vitals they have preyed till they have arrived at maturity. There is no insect whatever which the female will not attack in order to lodge her eggs in it's body; the caterpillar, the gnat, and even the spider itself, so formidable to others, is often made the unwilling support of this destructive progeny.

About the middle of June, when other insects are found in great abundance, the Ichneumon is seen flying busily about, seeking proper objects whereon to deposit her race. As there are various

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species of this fly, so they seem endued with different appetites: some place their eggs within the aurelia of a nascent insect; others deposit them within the nest which the wasp has curiously contrived for it's young; and, as both are produced at the same time, the offspring of the Ichneumon not only devour the young wasps, but the whole supply of worms which the parent had carefully provided for their support. However, the greater number of the Ichneumon tribe settle on the back of the caterpillar, darting at intervals their stings into it's body; and at every effort they deposit an egg, while the wounded animal appears but little sensible of the injury it has sustained. In this manner they leave from six to a dozen eggs within the fleshy substance of the reptile's body; and then fly off, in order to commit farther depredations. In the mean time, the caterpillar thus irreparably injured seems to feed as voraciously as before, without any abatement of it's usual activity; and, to appearance, is not at all affected by the internal enemies which are hastening it's destruction in their darksome abode. But they soon burst from their egg state, and begin to feed on the substance of their prison: as they grow larger, they require a greater supply; till at last the animal, by whose vitals they are nourished, being no longer able to support them, dies a mere skeleton. It frequently, however, happens, that it survives their worm-state; and in that case they change into a chrysalis, inclosed in the caterpillar's body, till the time of their delivery approaches, when they burst their cells, and fly away.

The Ichneumon Flies, though terrible to the insect tribes, are nevertheless of the most essential service to mankind. The millions of insects which they destroy in the course of a single summer are beyond conception; and, without such animals, the fruits of the earth would vegetate only to furnish a banquet for the insect race, and the nobler ranks of animated nature be reduced to the utmost distress.

ICHNEUMON WASP. An appellation given by the old writers to that species of small, slender-bodied Wasp, frequently found about mud-walls and dry banks. It is extremely different from the insect properly called the Ichneumon, being in reality a true Wasp, mottled with black and yellow, after the manner of the common kind.

ICHTHYOCOLLA PISCIS. A large fish of the surgeon kind, from which the drug called isinglass is made. See ISINGLASS FISH.

ICTERUS. A name commonly given to the jaundice-bird, belonging to the turdus kind.

ICTERUS, INDIAN BLACK HEADED; the Orioles *Melanocephalus* of Linnæus. This bird is about the size of the thrush; the bill is of a brownish white or dirty flesh-colour, and the head and under side of the neck are black. The whole body, the covert feathers of the wings, and the greater part of the tail, are of a fine bright yellow hue; the greater quill feathers are black, with yellow edges, and on the upper part of the ridge of the wings there is a slight mixture of yellow and black. The tail is composed of twelve yellow feathers of equal length, the two middlemost having each a transverse black bar, about an inch broad, at the top; the legs and feet are of a dull bluish black colour, there are four toes on each foot, and the claws are black, and pretty strong. This curious bird was first figured and described by Edwards, who says that it was imported from Bengal.

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JEAN-CAPELLE. An appellation given by some naturalists to the *Faber Indicus*, or Indian Dove of authors; more expressively named by Artedi the Zeus with a bifid tail.

JECARINUS PISCIS. A name given by Gaza, and some other ichthyologists, to the fish more commonly called the *Hepatus Piscis*; and, by some, the *Jecur Marinum*.

JENDAYA. A Brazilian bird of the paroquette kind, about the size of the blackbird. The beak and legs are black; the back, wings, and tail, are of a blueish green colour; the tips of the wings are blackish; and the head, neck, and breast, are of a pale yellow hue, with an admixture of orange.

JENTLING. A fish caught in the Danube, and several other German rivers; called by the natives Scheat, Jent, and Koppen; and, by Gesner, *Capito Cæruleus*, the blue chub.

JERBOA. A genus of animals with two cutting-teeth in each jaw, two very short fore-legs, two very long hind-legs resembling those of cloven-footed water-fowl, and a very long tail tufted at the extremity. There are several species.

JERBOA, EGYPTIAN; the *Mus Jaculus* of Linnaeus. This species has dark full eyes, long whiskers, and broad erect ears. It is about the size of a large rat; the head somewhat resembles that of the rabbit; and there are two cutting-teeth in each jaw. The tail, which is about ten inches long, is terminated by a tuft of black hair; the tip of which is white, but the rest short, brown, and rough. The head, back, sides, and thighs, are covered with long soft hairs, ash-coloured at the bottom, and of a pale tawny hue at the points; and the breast and belly are whitish. But the legs of this animal particularly merit attention: the fore-legs, which are not more than an inch long, have each five toes, the inner or thumb being hardly visible, but that, as well as the rest, is furnished with a sharp claw; while the hinder legs are two inches and a quarter long, covered with short hair, and exactly resemble those of a bird, containing each only three toes, all furnished with claws, of which the middlemost is the longest.

This animal inhabits Egypt, Barbary, Palestine, and the deserts between Baffora and Aleppo. It is as singular in its motions as in its form: it always stands or walks on its hind-legs only; while its fore-paws, like those of the squirrel, perform the offices of hands, and convey its food to its mouth. When disturbed or pursued, it often springs six or seven feet high from the ground; and moves so very swiftly, that scarcely any other quadruped is able to overtake it. It is a lively and inoffensive creature; feeds entirely on vegetables; and burrows in the ground like the rabbit.

In the year 1770, two of these little animals were exhibited in London, which burrowed almost through the brick wall of the room in which they were confined. They left their dormitories at night, and roved abroad in quest of food: they generally slept, rolled up like a ball, in the day-time; and, when touched, emitted a plaintive, feeble note.

These creatures frequently constitute some part of an Arabian banquet. In that country they are called *Duman Hach*, or the Lamb of Hach; and Bochart displays great ingenuity and erudition in endeavouring to prove that the Jerboa is the *Saphan* of Holy Writ.

JERBOA, SIBERIAN. This species has very long

whiskers; and long, narrow, transparent ears. Each of the fore-feet has five toes; and each of the hind three pointing forwards, and a fourth behind, about an inch above the heel. The upper part of the body is of a tawny colour, the lowest being whitish; and in the shape of its body, legs, and tail, it perfectly resembles the Egyptian Jerboa. It inhabits Siberia and Tartary; and is also found in Barbary and Syria, and even as far as India. It is extremely active in its disposition, and more expert in digging than the rabbit itself. When pursued, and unable to escape through swiftness, it instantly makes a hole in the ground, in which it sometimes buries itself deep enough to find security before its enemies can come up with it. In some places, the burrows formed by these animals are so numerous as to render travelling dangerous, the horses frequently stumbling into them unawares.

These creatures are extremely provident: they cut grass, leave it in little heaps to dry, and carry it afterwards into their burrows, where it not only supplies them with food, but renders their habitations warm for their young during the rigours of winter. They are easily tamed; and, when confined, do not refuse animal food, though in a state of nature they subsist wholly on vegetables. When confined to any particular place, they always seek the warmest corner; and generally prognosticate the approach of bad weather by wrapping themselves up in whatever warm materials they can find.

In a wild state, they become the prey of all the lesser rapacious animals. They breed often during the summer; and probably bring forth eight at a time, as the female is furnished with as many teats. They seem to pass the whole winter without nourishment. About Astracan, they sometimes make their appearance in a warm day in the month of February; but return to their holes whenever they feel the actings of the cold.

JERBOA, CAPE. The length of this species, from the nose to the tail, is upwards of fourteen inches; the tail itself is near fifteen inches long; and the ears are nearly three. The head is short and broad; the eyes are large; and the whiskers are full and long. The fore-legs are short, and furnished with five toes on each; and the hind-legs, which are long, have four toes a piece. The body is of a tawny colour above, and cinereous below, mixed with long hairs pointed with black; and two-thirds of the tail are tawny, the rest being black.

This species inhabits the lofty mountains to the north of the Cape of Good Hope: the Hottentots call it *Aerdmannetje*; and the Dutch *Springen Haas*, or the jumping hare. It is very strong for its size, and sometimes leaps twenty or thirty feet at a bound. When feeding, it sits upright, with its legs extended horizontally, and its back bent. It carries its food to its mouth by means of its fore-feet; and likewise burrows with them more expeditiously than any of its kind.

JERBOA, INDIAN. This animal has a slender nose, and large prominent eyes; its ears are broad, erect, semipellucid, and about an inch and a half long, with a tuft of hair between them; and there are two slender canine teeth and two cutting ones in each jaw. It has four long slender toes, and a distinct thumb on each foot; and the claws, which are sharp-pointed, are all attached to the skin, except those of the two interior toes of the hind feet. The hair on the legs and feet is short, white, and thinly scattered; and the tail is almost naked, that

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part next the body being round and scaly like that of the rat.

This species, which is a native of India, is about six inches long; and its hair, which is soft and downy, is cinereous mixed with tawny.

JERBOA, TORRID. This creature has long whiskers, naked open ears, and four toes on each of the fore-feet; the hind-feet, which are as long as the body, are thick, strong, and thinly haired, with five toes on each; the tail, which is about the length of the body, is very thin of hair; the upper part of the body is yellow; and the lower is white.

This species is no larger than a common mouse; and, according to Linnæus, the only naturalist who mentions it, is found only in the torrid zone.

JESUS. An appellation given by the natives of Dantzic to the fish called by Gefner and others the blue chub or capito cæruleus.

IGNAVUS. A term used by some authors to express the creature commonly called the sloth in England.

IGUANA. An animal of the lizard kind, of which there are several species.

The common Iguana is about five feet long; the body is as thick as a man's thigh; the skin is covered with small scales like those of a serpent; and the back is furnished with a row of erect prickles, resembling the teeth of a saw. The eyes seem to be but half opened, except when the creature is irritated, and then they appear large and sparkling; both the jaws are full of very sharp teeth; and its bite is dangerous, though not venomous. The male has a skin depending from the throat, which reaches down to the breast; and, when provoked, the Iguana puffs it up like a bladder. The female is considerably less than the male: the former is green, and the latter ash-coloured.

The flesh of these animals may be regarded as the greatest delicacy of Africa and America. The sportsmen of those climates hunt the Iguana in the same manner as the Europeans do the pheasant or the hare. At the beginning of the vernal season, when the great floods of the tropical climates are dried up, and vegetation starts into universal verdure, the hunters sally forth with a noose and a stick, along the sides of the rivers, in order to catch the Iguana. This animal, though apparently formed for attack, is one of the most innocent in nature, living among trees, or sporting in the water, without ever offering to offend; there, having fed on the flowers of the mahot, and the leaves of the mapore, that fringe the banks of the tropical streams, it reposes on the branches of such trees as overhang the water. On land, the Iguana is swift of foot; but, when once in possession of a tree, it seems conscious of the security of its situation, and never offers to stir unless roused: hence the sportsman has no great difficulty in finding it, and as easily fastens his noose round its neck. If its head be reclined in such a manner that the noose cannot readily be fastened, by striking the animal with a stick on the nose, it lifts up its head, which in some measure assists the operation; and in this way it is dragged from its protecting tree, and killed by repeated blows on the head.

About the month of May the females proceed to the sea-side, in order to lay their eggs, the males accompanying them. The number of their eggs is from thirteen to twenty-five, but they are not all laid at once: they are as large as those of the pigeon, their shells, which are white and soft, con-

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tain no white, and never become hard by boiling. The French pretend that they are much better tasted than those of pullets; and that they are proper to be mixed with all sorts of sauces. These eggs are laid in the sand; and, after being carefully covered over, are left to be hatched by the genial warmth of the sun.

IGUANA OF SURINAM. This species, which has a large skin under the throat, and a row of teeth or thorns on the upper part of the body, resembles the common Iguana in shape and colour; but differs from it in having prickles on the tail, and wrinkles or folds in the bag under the throat. The back and sides of the belly are brown mixed with blue; and the neck is sprinkled with blackish spots. Above the sides the colour is more bright; and the whole trunk of the body is covered with very thin scales. The thighs, legs, and feet, are of a dull blue colour; and the toes, which are of a chestnut hue, are armed with sharp crooked claws.

IGUANA OF CEYLON. This animal has a large, thick head, with warts or tubercles over the eyes; the forehead is covered with blue scales; and the eyes are large and sparkling. The ears are fringed with small eminences, which exhibit the appearance of eye-lids; the jaws are armed with small teeth; and underneath there are prickly scales of a bright blue colour. The upper part of the body is covered with large scales, encircled with broad whitish streaks; and the belly is of a very pale blue colour.

This creature can erect and depress the row of spines on its body at pleasure: these spines are of a pale blue colour, and reach along the back to the tail. The female is furnished with a double row of spines, which reach as far as the thighs, and then disappear.

IGUANA OF FORMOSA. The head of this species is variegated with scales of bay, brown, grey, and cinereous. The scales under the body are of a dusky grey colour; but the bag under the throat, the hinder thighs, the paws, and the tail, are encircled with large bright grey streaks; and the fore-part of the bag under the throat, as well as the top of the back, are armed with large prickles, which on the latter reach to the tail. The flesh of this animal is esteemed very delicious.

Formosa affords another variety of the Iguana, of an inferior size, and with two rows of teeth running from the top of the neck to the middle of the tail. The bag under the throat is connected to the lower jaw; and that, as well as the head, belly, legs, feet, and tail, are of a deep blue colour; and the back is covered with thin small scales of a dun grey.

IGUANA OF NEW SPAIN. This species, like the other congenerous animals, is armed on the back with large teeth or prickles, covered with small thin scales of a rhomboidal figure, of a greyish and reddish colour undulated with bay brown. The head, and the bag under the throat, are a bright grey, the latter being marbled with black; the tail is thick at the root, long, and slender at the end; the jaws are furnished with small teeth; and on the side of the lower, beneath the ear, there is a sort of white button resembling a flattened wart.

JIBOYA. A monstrous serpent inhabiting Java and Brazil, which Legaut affirms he has seen fifty feet long: nor is this gentleman singular in his report, many of the missionaries corroborating his assertion, and, as a farther proof, we have the con-

current testimony of historians. However, the largest animal of this kind imported into Europe was only thirty-six feet long; but it is probable that much larger have been seen and destroyed before they were judged sufficiently curious to be sent so far for the inspection of the naturalist. The teeth of this serpent are small in proportion to its size; nor does the creature use them, even when it seizes the smallest prey. It lies in wait for wild animals near some path, throws itself on them, and encircles them so closely as to break all their bones; then moistening their whole bodies over with its saliva, renders them fit for deglutition, and thus swallows them entire.

JIYA. An American animal of the otter kind, called also Carigueibeiu. It is about the size of the spaniel, and of the amphibious kind of quadrupeds. The head, which is round, resembles that of the cat, but the nose is somewhat pointed; the eyes are black; the ears are roundish, and placed very low, as in the otter; and it has a sort of beard or whiskers, composed of a few stiff hairs. The feet are all furnished with five toes, the interior being the smallest: the hair is soft, short, and black, except on the head, where it is brown; and under the throat, where there is a yellow spot. This creature feeds on fishes, and some other animals; and its voice resembles that of a puppy.

ILIVILIHU. An appellation given by the natives of the Philippine Islands to a very remarkable bird common in that country. Ornithologists generally distinguish it by the name of the *coturnix parvula montana*, the small mountain quail: and indeed, in every essential character, it resembles the quail; but its colours are more beautifully variegated; and it is smaller than the sparrow. It commonly resides in mountainous places; and its flesh is esteemed a peculiar delicacy.

IMAGO. A term used by Linnæus to express the third state of insects, when they appear in their proper shapes and colours, and undergo no more transformations.

IMBER. A name sometimes given to that species of goose called also the ember and the fluder.

IMPERIAL CROWN. A species of the *voluta* genus of shells with a sharp clavicle.

INK-FISH. See **CUTTLE-FISH**, and **SEPIA**.

INSAG. An appellation given by the natives of the Philippine Islands to a species of parrot common in the sylvan parts of that country. Its colours are the most beautiful in nature; the body being a very vivid green, and the head a fine florid red.

INSECTS. A class of animals so called from the Latin *In*, and *Seco*, I Cut; because, in many of these tribes, the body seems to be cut or divided into two. The distinguishing characters of insects are these: their bodies are covered with a sort of bony substance instead of skin; and their heads are furnished with antennæ, called horns.

Among the infinite variety of objects which nature exhibits to the inspection of the curious, Insects, though the smallest in the scale of being, are certainly not the least interesting. Though their minuteness may, at first view, give colour to an idea of their insignificance; and though the untutored part of mankind may regard them as the result of chance, or the refuse of nature; he who views them with due attention, and reflects on the art and mechanism of their structure, where such a number of vessels, fluids, and movements, are collected into one point, frequently invisible to the

naked eye; cannot but acknowledge them to have been formed by the hand of unerring Providence, and perfectly adapted for that sphere in existence which they are destined to fill.

Those animals which chiefly attract our notice by their magnitude, are but the smallest part of animated nature: the whole earth swarms with living beings; every plant, grain, and leaf, supports the lives of thousands. Vegetables seem, at first sight, to be the parts of organized nature which are produced in the greatest abundance; but, on a minuter inspection, we find each supporting numberless creatures, which fill up the various gradations of youth, vigour, and old age, in the space of a few days, or a few months at most. Vegetables are generally produced but once in a season; but, with respect to insects, especially of the smaller kinds, a single summer suffices for several generations: these therefore would multiply in greater abundance than the plants on which they subsist, were they not destroyed by other animals, and not unfrequently by each other. Spiders feed on flies; birds devour spiders; and birds, in their turn, are the food of man, as well as of every beast of prey. This wise disposition of instincts implanted in every class of animated nature, prevents the earth from being overstocked with any particular kind, and preserves a just balance between the numbers and necessities of every tribe.

An Insect may be defined as a little animal without blood, bones, or cartilages; furnished with a trunk, or else a mouth, opening lengthwise; with eyes destitute of coverings, and lungs opening on the sides. This definition will comprehend the whole class of Insects, either with or without wings; either in their caterpillar or butterfly state; either produced in the ordinary method of generation between male and female, or from an animal that is itself both male and female, or from the same animal cut into several parts, and each part reproducing a perfect animal.

Hence it will appear, that in this class of nature there are numerous distinctions, and that no general description will serve for all. Almost every species has its own distinct history; and exhibits manners, appetites, and modes of propagation, peculiar to itself. In the larger ranks of existence, two animals, nearly resembling each other in form, will be found to have a similar history; but here, Insects almost entirely similar will often be found perfectly dissimilar, as well in their manner of bringing forth and subsisting, as in the changes which they undergo during their very limited lives. Thus, as this class is prolific beyond computation, so are its varieties multiplied beyond the power of description. To enumerate all the different species of flies or moths, would be a fruitless attempt; but to give a history of all would be utterly impracticable. So various are the appetites, the manners, and the lives, of this humble class of beings, that every species requires its distinct history.

An exact plan, therefore, of nature's operations, in this minute set of creatures, is not to be expected; and yet such a general picture may be given, as is sufficient to evince the protection which Providence affords its smallest as well as largest productions; and to display that admirable circulation in nature, by which one kind of beings finds subsistence from the destruction of another, and by which life is continued without a pause in every part of the creation.

In a cursory inspection of the insect tribes, the first

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first animals which present themselves are those that are destitute of wings, and appear crawling about on every plant, and every spot of earth examined with any degree of attention. Some of these never acquire wings at any period of their existence, but are destined to creep on the vegetables or spots of earth where they are stationed for their whole lives: on the contrary, others are candidates for a happier existence; and only wait for their nascent wings, when they may be said to arrive at their most perfect state. Those which are never furnished with wings, but creep about till they die, may properly be considered as constituting the first class of insects: all these (the flea and the wood-louse excepted) are produced from eggs; and, when once they break the shells, never experience any farther change, but continue increasing in size till the expiration of their lives. Thus the louse and the spider are produced from an egg; and, after exclusion, do not undergo any farther alteration, but, like the chicken or the duck, remain invariably the same from their birth to their dissolution.

The second order of Insects is composed of such as have wings; but which, when produced from the eggs, have those wings so cased up as to be concealed: this covering up of the wings does not prevent the creatures from running, leaping, and moving, with their natural celerity; but, when the cases burst, and the wings have the power of expansion, all the motions of the animals become more extensive, and they arrive at full perfection. In this manner the dragon-fly, the grasshopper, and the earwig, have their wings at first confined; but, when the skins burst, they are immediately expanded, and the animals pursue the purposes for which they were produced.

The moth and the butterfly kind, which may be considered as the third order of Insects, have all four wings, each covered with a mealy substance of various colours, which is easily rubbed off; and, if examined by the microscope, will appear like scales, with which the wings are elegantly embroidered. These Insects also are produced in a manner peculiar to themselves: each of them is first hatched from an egg, from whence issues a caterpillar that often sheds it's skin; and, after having divested itself, for the last time, of it's exuviae, assumes a new covering, called a chrysalis, in which it continues hid till it comes forth in it's winged state.

The fourth order of Insects proceeds from those which, though winged, originate from worms, and not from caterpillars; yet undergo changes similar to those of the butterfly tribe. Each is first excluded from the egg like a worm, and then becomes a chrysalis. In some, the wings and legs are seen; in others, the animals are quite detached from the cones in which they are concealed: but all at length burst their prisons, and come forth perfect; some furnished with two, and others with four wings. The wings of all these differ from the butterfly and moth kind, in being destitute of mealy scales. In this class may be ranked the numerous tribes of gnats, beetles, flies, and bees.

To the four orders of Insects already enumerated, may be added a fifth, consisting of a numerous tribe of modern discovery, to which naturalists have applied the name of Zoophytes. For the production of these, the ordinary forms of generation are unnecessary; they may be propagated by division: some of them, though cut into a hundred

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parts, will still retain the vital principle in each, and every individual part will in a short time produce a perfect animal. These indeed appear to be a set of existences placed between animals and vegetables, and formed to connect animated and insensible nature: to this class belong the polypus, the earth-worm, and all the varieties of the sea-nettle.

Having exhibited a general distribution of Insects, we shall next enquire into some of the most distinguishing characters and qualities of the whole race.

Some Insects attract our notice by the beauty of their colourings: butterflies, cantharides, and all the shining flies, exhibit sufficient proofs that Nature has not been sparing in her embellishments on this tribe of beings. The same wisdom which has rendered some Insects beautiful, has also given others a sufficient share of strength and armour for their necessary defence, or for the means of procuring their food: though they do not always catch what they lie in wait for, or avoid what is noxious, they are all provided with what is most essentially adapted for those purposes. The common leech is furnished with strong teeth; the wasp and the bee have powerful stings; and some snails are provided with such strong shells, that they are defended from external injuries, at the same time that their locomotive powers are not abridged. The most delicate Insects, such as caterpillars, are furnished with hairs, which serve to break the force of the shocks they are liable to receive, as well as to weaken the blows that might otherwise injure them. The generality of Insects are quick in flight to avoid impending danger; some by the assistance of their wings; and others by means of threads, which they can throw out, and hang by till the danger is past: others again, like the grasshopper, are enabled to leap to a very considerable distance. And thus all, however minute, have some means by which they consult their own preservation.

Nor is our admiration less excited by a review of the various organs by which some animals are assisted to live, and the instruments they use, according to their various professions. The silk-worm is excellently formed for spinning, having two distaffs, and fingers to draw out the thread; the spider can fabricate nets and webs, and is therefore provided by nature with implements for that purpose; the wasp, by means of two small saws which spring from the angles of the mouth on each side, procures what materials are necessary for the construction of it's cell; while bees are furnished with a variety of weapons indispensably necessary in the formation of their combs and the collection of their honey: the trunk of the bee, indeed, is more wonderful than that of the elephant; the latter is only adapted to the private convenience of the animal; but the trunk of the bee is fitted for extracting honied balsam even from herbs of the most deleterious nature.

The structure of the eye in Insects is remarkably different from that of other creatures in a variety of respects: it is defended by it's own rigidity against external injuries; and it's cornea is all over divided into lenticular facets, which, viewed by the help of the microscope, appear like a beautiful piece of lattice-work, each opening in it being of such a nature, that, when looked through, objects appear inverted. This mechanism alone supplies the place of the crystalline humour, which is never

ver found in Insects. Spiders have generally eight eyes; and flies may be said to have as many organs of sight as there are perforations in the cornea, or external covering of the eye. Animals in general are obliged to turn their eyes different ways to behold objects; but those of flies are so contrived, as to admit every neighbouring object at once. In order to keep their eyes clean, they are provided with two antennæ or feelers: some, however, are of opinion, that they cleanse their eyes with their fore-legs as well as feelers; nor does this conjecture seem ill founded, when we consider that in some sorts, particularly the flesh-fly, the feelers are too short to answer this purpose, and therefore the legs alone can supply this defect. Nor does the mechanism of their feet less deserve our attention. The hind-legs of amphibious Insects, such as water-beetles, which are sometimes obliged to live on land as well as in the water, are formed with commodious flat joints; while gristles, which are placed at the extremity of the limb on each side, supply the place of oars. In those Insects whose motions are performed by leaping, such as the grasshopper and the cricket, the legs are strong and brawny; those, on the contrary, which use their claws in perforating the earth, have such members adapted, by their strength and swiftness, for that purpose. There are even some Insects which transport themselves from one place to another in a manner wholly unknown; those generated in stagnant waters are often found in new pits and ponds, and sometimes on the tops of houses and spires; and spiders frequently soar with their webs to the summits of the most lofty edifices.

Such Insects as are furnished with wings, have tendons to expand and strengthen them: those which are provided with four, as the ephemera fly, use the uttermost pair rather as cases to defend the interior wings, than as auxiliaries in flight. When the Insect is at rest, the inner wings are generally closed up; nor is it without some efforts that the little animal is able to unfold them. Such Insects as have only two wings, are supplied with two little balls, or posers, joined to the body under the hinder part of each wing, which serve to keep them steady, and in some measure counteract the changes of the air, which at every variation might carry them off in it's current. If one of the balancers be cut off, the Insect will soon fall to the ground; but if both of them be cut away, it will still continue to fly, though at the direction of every breeze.

Almost all sorts of Insects are generated, like larger animals, from eggs; and these are at first inclosed in a single or double covering, which opens when the animal is old and strong enough to pierce through it. When the young break their coverings at their first ingress into the world, the parents are said to be viviparous; as for instance, the millepedes: when the old ones bring forth their young in a covering where they are doomed to remain some time, like the silk-worm, they are said to be oviparous.

Insects of the oviparous kind always deposit their eggs in proper places, where they are hatched by a requisite degree of heat. No Insects abandon their eggs to chance; nor are they ever mistaken in laying them in such situations where they may receive proper nourishment as soon as they are hatched. Those caterpillars which feed on cabbages, are never found on willows; nor such as feed on willows, on cabbages. The moth delights

to lodge among woollen stuffs, or papers; but never takes up it's residence on plants, nor in mud. Hence it is evident, that instinct, not chance, directs their choice.

When some of these eggs are hatched, the young appear in their perfect and permanent shape; but the greater number of Insects pass through different states, and successively assume the figure of two or three animals which have no resemblance to each other. From the egg of the gnat proceed divers animalcula, which pass through three different states: in the first place, they live in the water; then they change to amphibious animals; and, lastly, they become denizens of the sky.

Summer is the time suited to the pleasures of Insects: few of them live more than a single season; and some only a few hours. Such, however, as are long-lived, take the necessary precautions to provide for their safety and subsistence during the winter, fixing on the most convenient situations for spending that interval, and laying in a sufficient quantity of food. But the greatest number sleep during the continuance of the cold season, and therefore do not stand in need of provisions. Some caterpillars, for instance, having fed during the summer, retire, at the approach of winter, to places of security; where spinning threads like cobwebs, they suspend themselves, covered with fictitious coats, which at once serve to keep them warm and to guard them from external injuries: in this torpid state they continue till the returning sun calls them to new life; then they expand their wings, and seem wholly employed in propagating their kind.

There are some Insects, however, which lay up provisions for the winter; of which the bee, and the ant of foreign countries, are remarkable instances. The wasp, the hornet, and the wild bee, are no less assiduous in laying in a proper stock of food, and fitting up commodious apartments: but this is wholly for the sake of their young; for they desert their nests in winter, leave their offspring furnished with every convenience, and retire to some other situations, where it is probable they live without food.

But notwithstanding the admirable habits and instincts observable in the Insect tribes, it must be confessed, that in every respect they deserve to be considered as the last and lowest rank in animated nature. As, in mechanics, the most complicated machines are required to perform the nicest operations; so, in anatomy, the noblest animals are most variously and wonderfully made. Of all living existences, man exhibits the most astonishing variety in his internal conformation; quadrupeds next succeed; and other animals follow in proportion to their powers and excellencies. Insects, of all others, seem to be the most imperfectly formed; many of them will live a considerable time after being deprived of those organs which are essentially necessary to life in the higher ranks of nature; and the caterpillar will continue to exist when deprived even of it's heart and lungs.

But it is not from their conformation alone that Insects are inferior to other animals, but from their instincts also. It is true that the ant and the bee present us with very striking instances of assiduity and foresight; but they fall very short of those proofs of sagacity displayed by the hound or the horse. A bee, when separated from the swarm, is totally helpless, inactive, and incapable of giving the smallest variations to it's instincts: it has but

one single method of operation; and, if taken from that, can have recourse to no other. In the pursuits of the hound, there appears something like choice; but, in the labours of the bee, the whole has the semblance of necessity or compulsion.

Another argument of the imperfection of Insects may be drawn from their amazing numbers. It is a rule which universally obtains, that the nobler animals are slowly produced, and that Nature acts with a kind of dignified œconomy; while the meaner births are lavished in profusion, and thousands are produced merely to supply the necessities of the more favourite objects of creation. All other animals are capable of some degree of education: their instincts may be suppressed or altered; the dog may be taught to fetch and carry; the bird to whistle a tune; and the serpent to dance: but the Insect has only one mode of operating; no arts can divert it from it's instincts; and indeed it's whole life is too short for receiving any portion of instruction.

If Insects are regarded as bearing a relation to man, and as assisting him in the pleasures and necessities of life, they will, even in this respect, sink in the comparison with the larger tribes of animals. It is true, that the bee, the silk-worm, the cochineal-fly, and the cantharides, are of the most essential service; but how many others of this class are either noxious, or wholly useless! Even in the most cultivated countries, where injurious animals have been reduced by repeated assiduity, the Insect tribes still maintain their ground, and are often unwelcome intruders on the fruits of human industry. But, in more uncultivated regions, their annoyances and devastations are unbounded. What a miserable life must the Laplanders lead, as well as the natives of some parts of America, where a candle is no sooner lighted, than the Insect-swarms instantly extinguish it; where the inhabitants are obliged to smear their bodies and faces with tar, or some similar composition, to protect them from the punctures of these minute enemies; and where, though millions are destroyed, millions constantly succeed, and render life still more uncomfortable than the climate itself naturally would, with all it's attendant horrors!

INSECT, MUSK. A term used by some naturalists in a vague sense, to express the capricorn, or musk-beetle: however, there are other Insects which smell as strongly of that perfume; particularly a small kind of bee, which frequents the ranunculus and dandelion; and a hexapode worm, which feeds on the gallum luteum.

INTESTINA. A genus of worms in the Linnæan system; the characters of which are, that they are simple, naked animals, without limbs; some pierced with lateral holes, or a kind of pores; and others entirely imperforated. The subordinate genera of this class of worms are the gordius, alcaris, lumbricus, fasciola, sipunculus, hirudo, and myxine, comprehending twenty-four different species.

JONÆ PISCIS. An appellation given by many naturalists to the common shark, the *Canis Carcharius* of Linnæus. This name seems to have been adopted from an opinion that this fish swallowed up the prophet Jonas; but there are many objections against this conjecture.

JOPPA WHEAT. A name sometimes used to express a species of the buccinum.

JOSO. A small marine fish of the sea eel-kind, or rock fish kind, common in the Mediterranean, and called *gobius albus* by some ichthyologists.

IPECA GUACA. A Brazilian bird of the duck kind. It is of a middle size between the duck and the goose; and is generally kept tame, as well for the sake of it's eggs as it's flesh.

IPECATI APOA. A Brazilian species of duck, to which the Portuguese have given the name of Pata. It is nearly of the size of the goose, but exactly resembles the duck in shape and figure.

IPECU. A Brazilian bird of the woodpecker kind, called by Ray *Picus varius Brasilensis*. It is about the size of the common pigeon: the beak is straight, very sharp, and hard; with which it pierces trees, in the same manner as the congenious European birds.

IPERAQUIBA. An appellation given by some authors to the remora or sucking-fish.

ISABELLA. A name given by the French conchyologists to the beautiful pale brown voluta, so much esteemed by some collectors of shells.

ISARUS. A term used by the ancients to express the chamois-goat.

ISATIS. An animal of the fox kind, called by some authors the arctic fox. It's hair, which is softer than that of the common fox, is sometimes white, and at others brown, and even blue; but is much longer in winter than in summer, which indeed is usual with animals peculiar to cold climates.

The Isatis is very common in all the hyperborean countries bordering on the Icy Sea, and is seldom seen but in the coldest climates. It is principally found in the mountains and naked regions of Norway, Siberia, and Lapland. In the shape of it's body, and the length of it's tail, it resembles the fox; but, in the figure of it's head, and the position of it's eyes, it is more like the dog. Not being able to burrow on account of the frost, it lives in the clefts of rocks; and two or three pair generally inhabit the same hole. It barks like the dog; and generally goes with young nine weeks.

These animals, which possess all the cunning of the common fox, prey on young geese, ducks, and water-fowl, before they are fledged. In Greenland, they are compelled by necessity to feed on berries, shell-fish, or any substances which the sea casts up; while their principal food, in the north of Asia and in Lapland, is the lemming, or Lapland marmot. The fur of the Isatis is of no value, unless the creature is killed in the winter season.

ISINGLASS FISH. A species of the accipenser or sturgeon, distinguished from the others by being destitute of the tubercles which appear on the body of the common sturgeon.

These fish, which are caught in great quantities in the Danube from October till January, seldom weigh less than fifty pounds each, and sometimes upwards of four hundred. Their flesh is soft, glutinous, and flabby; but it is sometimes salted, and is then reckoned tolerable food. However, they are principally caught for the sake of that valuable commodity called Isinglass, which they furnish in such abundance, and which is made in the following manner. The skin, the entrails, the fins, and the tail of the fish, are cut into small pieces; and, after macerating for some time in a sufficient quantity of warm water, are boiled over a slow fire till they are dissolved and reduced to a jelly: this jelly is spread on instruments made for the purpose, so that, in drying, it assumes the form of parchment; and, when perfectly dry, is rolled up in that shape in which we meet with it in the shops.

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ITAIARA. A name given by some authors to a Brazilian fish of the turdus kind, more usually known by that of jurun capeba. It's colours are extremely beautiful; and it's flesh is excellently flavoured.

ITCH ANIMAL. A species of acarus, generally found in the pustules of the Itch, and supposed by physicians to be the origin of the disease. When this animalcule is examined by a microscope, it seems to resemble the tortoise; being furnished with six feet, a sharp head, and two small horns at the extremity of the snout. It is very brisk and active; and occasions such an irritation of the part where it is lodged, as to oblige the patient to scratch it.

JUDDOCK. A common English name for the small snipe, called by authors gallinago minima, and in some places the ged and jack-snipe.

JUGULAR FISH. A Linnæan name for a certain order of fishes; the general character of which is, that the ventral fins are placed before the pectoral ones. This order comprehends five genera, viz. the callionymus, uranoscopus, trachinus, gadus, and blennius; including thirty-five subordinate species.

JULIS. A small fish, about three inches long, caught principally in the vicinity of Genoa. The male is very beautifully painted: the back is green; the head is variegated with yellow and red; the lateral lines are broad, serrated, and of a fine gold colour; and the dorsal fin has several large spots of blue and red.

JUNCO. The classical name for the reed-sparrow.

JUPAJUBA. A Brazilian bird resembling the guira tantigina, called also the japu. It suspends it's nest, in a very surprizing manner, from the twigs of trees, in order to save it's eggs and young from serpents and predaceous birds.

JUPATUMA. A name given by some au-

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thors to the American animal more generally known by that of the opossum.

JURUCUA. A species of tortoise found in the Brazils, whose feet are shaped almost like wings, the fore ones being about six inches long, and the hind considerably shorter. The tail is short, and of a conic figure; the eyes are large and black; and the mouth, which is destitute of teeth, resembles the beak of a bird. It is frequently four feet long, and about three broad; and it's ribs, which are fastened to the shell, are eight on each side, the middle ones being the longest. The flesh and eggs of the Jurucua are of a very delicate taste: the eggs are laid in holes on the sea-shore; and, being covered with sand, are hatched by the heat of the sun. A number of whimsical figures generally run in various directions on the shell, the entire ground of which is usually black and glossy.

JURUNCAPEBA. A marine fish of the turdus or wrasse kind, caught among rocks about the shores of the Brazils, and called also itaiara. It is usually five or six inches in length, and about a third part of it's length in breadth; it's mouth is extremely large and wide, and of a somewhat triangular figure; and it's flesh is very delicious.

JURURA. A Brazilian species of tortoise, seldom exceeding ten fingers in breadth, and eight or nine in length. It can at pleasure conceal it's whole body in the shell, or thrust out it's head to the distance of two or three inches: the head is thick and long; the nose is elevated and pointed; the mouth is large; the eyes are black; the feet are furnished with four long claws; the tail is short and pointed; and the skin is rough and scaly. The upper shell is brown, and the lower yellow; and the eggs, which are white and round, are extremely well tasted.

IXALOS. A name given by Greek writers to the creature commonly known by that of the chamois-goat.

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KAALING. A species of starling common in China and the Philippine Islands. It's back, eyes, legs, and beak, are yellow. It is easily tamed; and may be taught to sing, and to imitate the human voice. In a state of nature, it feeds on rice and insects; but, when confined to a cage, will eat bread, and almost any kind of fruit.

KABBOS. An oriental fish of the mustella kind, about two feet long, and destitute of scales. It's general colour is brown; but the snout is much paler than the rest, and spotted with black. The head is of an obtuse figure; and the eyes are placed very near it's extremity.

KAELE FISH. An East Indian fish which somewhat resembles the pike, it's mouth being furnished with a great number of sharp teeth, and having large bright eyes. It's belly and tail are of a purple colour; and it's back is brown. It measures about eighteen inches in length; it swims

with great rapidity; and it's flesh, though hard, is well flavoured.

KANGURU. An animal discovered by our British navigators on the western side of New Holland, and as yet unknown in any other part of the world. Pennant refers it to the opossum kind; while other naturalists seem to consider it as a species of jerboa. It has a small oblong head, shaped like that of the fawn, and tapering from the eyes to the nose; the upper lip is divided; the nostrils are wide and patulous; the upper jaw is longer than the under, and both are furnished with whiskers; the irides are dusky; the ears are erect, oblongly ovated, and covered with short hairs. There are four broad cutting-teeth in the upper jaw; two long lanceolated teeth in the lower, pointing forwards; and four grinders in each jaw. The body increases in thickness to the rump; the belly is convex and large; the fore-legs are very short,

K E R

short; and the hind are almost the length of the whole body. On the fore-feet there are five toes, with large conic, strong claws; and on the hind there are only three. The tail is very long, extending as far as the ears, thick at the base, and tapering to a point; and the hair is soft, and of an ash-colour, but somewhat lighter on the belly than the back. The length of this animal is generally upwards of three feet; and the tail measures nearly thirty inches.

The Kanguru lurks among the unpastured grass which covers the desolate country it inhabits. It feeds entirely on vegetables; and walks wholly on it's hind-legs, using it's fore-feet only for the purposes of digging and carrying it's food to it's mouth. It appears to be extremely timid and harmless, as it flies at the sight of a human creature with prodigious bounds. When in motion, it carries it's tail at right-angles with it's body; and no dog can arrest it's flight. It's flesh is reckoned wholesome and palatable.

KARAGAN. An animal found in Great Tartary, strongly resembling the brant fox; of which it is either a variety, or very nearly allied to it.

KATA, of Syria. A bird of the grouse kind, about the size of the partridge; and, with respect to shape, between that and the pigeon. The bill is of a light colour tipped with black, and short and thick; the legs are white, and covered with feathers on their fore-parts; those of the toes stand forwards; and there is a small spur behind. The plumage round the eyes and the fore-part of the neck is of a light colour, except beneath the throat, where it is black. The breast is of a cinnamon hue, bounded at it's rise and extremity by a black ring; the belly is white; and the back, as well as that part of the wings next to it, are of a mouse-colour, with an admixture of bright yellow, white, and black. The long feathers of the wings are also of a mouse-colour; those on the rump are beautifully variegated with black, white, and yellow; and the tail, which is short, terminates, like that of the pigeon, in two long, narrow, black feathers, exceeding the others about three inches.

During the months of May and June, these birds are very numerous about Aleppo. Their flesh is black, dry, and hard; nevertheless, the Turks reckon it very delicious.

KERMES. Minute animals found in great abundance on ever-greens of the oak kind, and forming excrescences of considerable utility both in the materia medica and the art of dyeing.

The Kermes is properly an insect of the progall class, and of that genus whose figure resembles a slightly truncated sphere. It is found on a particular kind of the ilex, known by the name of the *ilex aculeata cocciglandifera*, which never rises to any considerable height: it is very common in the more uncultivated parts of Provence and Languedoc; in Spain; and in the islands of the Archipelago, particularly Crete. The peasants make their harvest of these insects from off the ilex at the proper season.

But though the history of this drug is a subject which merits the attention of every naturalist, a number of years have elapsed since it has been examined with any degree of accuracy. De La Hire and Sedileau paved a way to it's investigation by their history of the gall insect of the orange-tree, but all the advantages which might have been expected to flow from thence, were not soon obtained; nor was the resemblance and the strict

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analogy between the flat and the spherical gall-insects so soon observed as might reasonably have been expected.

When the Kermes has attained it's full growth, it appears like a small shell fixed to the branches of this shrub, of a bright and shining colour resembling that of a ripe plumb, and covered with the same sort of powder which overspreads that fruit: this powder is commonly called the flower of the Kermes.

According as the winter is more or less mild, the harvest of Kermes is proportionably plentiful; and the natives of those countries where they abound, always prognosticate a fine season when the spring has been free from frosts and fogs. It is observed that the lowest and oldest shrubs are always most prolific in these insects; and those produced in maritime countries are invariably found to be larger and finer than such as come from more inland parts.

It is no unusual thing for the natives to have two harvests of Kermes in one year: those of the latter season are smaller and less valuable than those of the first; and are found not only on the branches, but also on the leaves of the shrub; exactly analogous to the custom of all the gall-insects, which leave the branches to feed on the leaves, where their yet tender trunks can find an easy entrance.

The Kermes is of the most essential service in medicine: it is cardiac, desiccative, and astringent; it fortifies the stomach, and prevents abortions. In the art of dyeing, it is of still greater utility; it enters into the composition of the scarlet dye, and affords a most beautiful and permanent tinge.

There are several varieties of this valuable insect, but all agreeing in the two grand characters of beauty and utility. See Coccus.

KESTREL; the *Falco Tinnunculus* of Linnaeus. A beautiful bird of the hawk kind, called also the stannel and windhover. The male of this species is about fourteen inches in length, and two feet three inches in breadth. It's colours, at first sight, distinguish it from all other hawks: the crown of the head, and the greater part of the tail, are of a fine light grey hue; and on the lower part of the latter there is a broad black bar, succeeded by white tips. The back and coverts of the wings are red, inclining to purple, and embellished with elegant black spots; and the interior sides of the quill-feathers are dusky, deeply indented with white. The whole under-side of the bird is of a pale ferruginous colour, spotted with black; and the cere and legs are yellow.

The female of this species weighs eleven ounces: her colours are less vivid than those of the male; her breast is of a dirty white hue; and the centre of each feather has an oblong dusky streak pointing downwards.

The Kestrel breeds in the hollows of decayed trees, the holes of high rocks, towers, and ruinous buildings; and lays four eggs, which appear as if deeply besmeared with red, through which a few spots of white are perceptible. It feeds on field-mice, small birds, and insects, which it possesses the faculty of discovering at a vast distance. This bird is frequently observed in the air, fixed to one place, and fanning itself with it's wings, at which times it is watching for it's prey. When falconry was fashionable, the Kestrel was tamed, and trained for catching small birds and young partridges.

KID. A name given to the young of the goat-kind. See GOAT.

KIDDOW.

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KIDDOW. The English appellation for a web-footed fowl common on the British shores; and called in different places the guillemot, the sea-hen, and the skout.

KILCH. The German name for a fish of the albula kind, caught in the lakes of that country. Its flesh is firm, of a delicate flavour, and very little different from that of the ferra.

KILLER. A creature of the cetaceous kind, so called by the fishermen of New England from the animosity it shews to the whale. Though a congenerous animal, it is said to surround the whale, and to attack it with all imaginable fury and violence. Some seize it behind; others attempt it before; till at last the large unwieldy creature is torn down, and affords a lasting provision to its cruel destroyers. So strong are these Killers, that one of them has been known to stop a dead whale which several boats were towing along, and to drag it to the bottom of the ocean.

KIMBULA. A species of crocodile found in the Island of Ceylon, of a very beautiful variegation of colours, being elegantly mottled with black shining spots of a velvet gloss.

KINE. A term by which animals of the cow kind are frequently expressed.

KING FISH. An appellation sometimes given to the opah, a fish of the doree kind. See OPAH.

KING-FISHER. A genus of birds of which there are various species. Their distinguishing characters are, that the bill is straight, strong, and sharp-pointed; that the tongue is short and pointed; and that the three lowest joints of the exterior toe are connected to the middle one.

KING-FISHER, COMMON; the *Alcedo Ipsida* of Linnæus. This bird seems to unite in itself somewhat appertaining to almost every class. It possesses appetites for prey like the rapacious kinds; and an attachment to water, like the birds of that element. It also possesses the beautiful plumage of the peacock, the delicate shadings of the humming-bird, the short legs of the swallow, and the bill of the crane.

The King-Fisher is somewhat larger than the swallow: its shape is clumsy; its legs are very small; and its bill is disproportionably long, being nearly two inches from the base to the tip, the upper chap black, and the lower yellow. But the beauty of this bird's colours amply compensate for the inelegancy of its form: the top of the head, and the coverts of the wings, are of a deep blackish green hue, spotted with bright azure; the back and tail are of the most resplendent azure; the belly is orange-coloured; and a broad mark of the same colour extends from the bill beyond the eyes, near which there is a large white spot. The tail, which is short, consists of twelve feathers of a rich deep blue; and the feet are a reddish yellow.

This is one of the most rapacious little animals that skims the deep: it is continually in action; and feeds on fishes, which it takes in surprising quantities considering its clumsy form and diminutive size. It is generally seen on the banks of rivers; and, like the osprey, seizes its prey by balancing itself at a certain distance above the water for a considerable space, and then darting on the fish with unerring aim. In a clear day its plumage exhibits an amazing diversity of brilliant colours, while the bird itself remains suspended in the air, and this extraordinary beauty has probably given rise to various fictions.

This species is the Mute Halcyon of Aristotle,

K I N

which he describes with unusual precision. After mentioning the particulars of this bird's figure, he subjoins a description of the nest, which appears as fabulous and extravagant as any story the most inventive of the ancients ever delivered. He says it appeared like those concretions which are formed by the sea-water; that it resembled the long-necked gourd; was hollow within; had a very narrow entrance; and that, if ever it overset, the water could not enter: that it resisted any violence from iron, but could be broke with a blow from the hand; and that it was composed of the bones of the sea-needle.

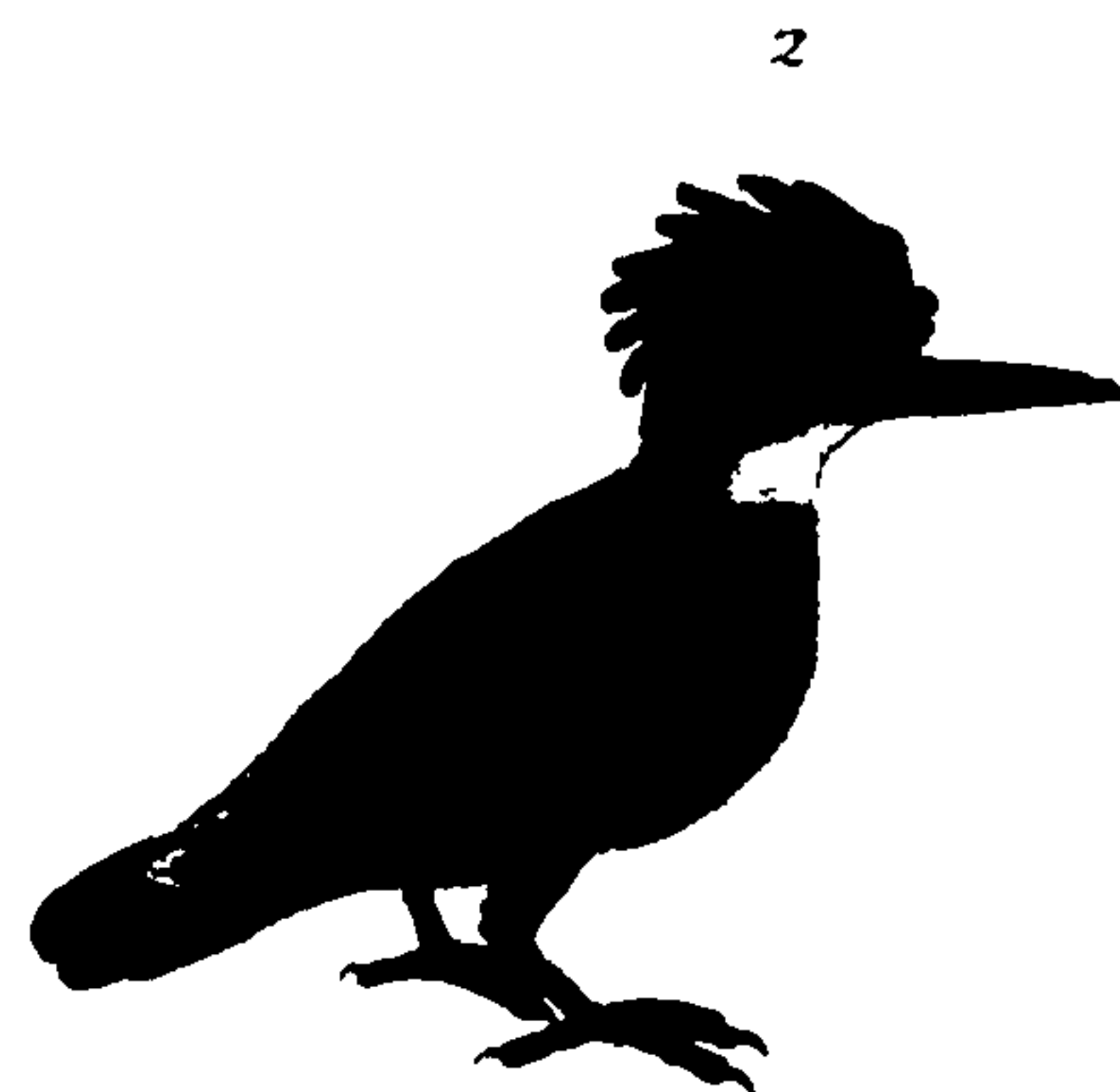
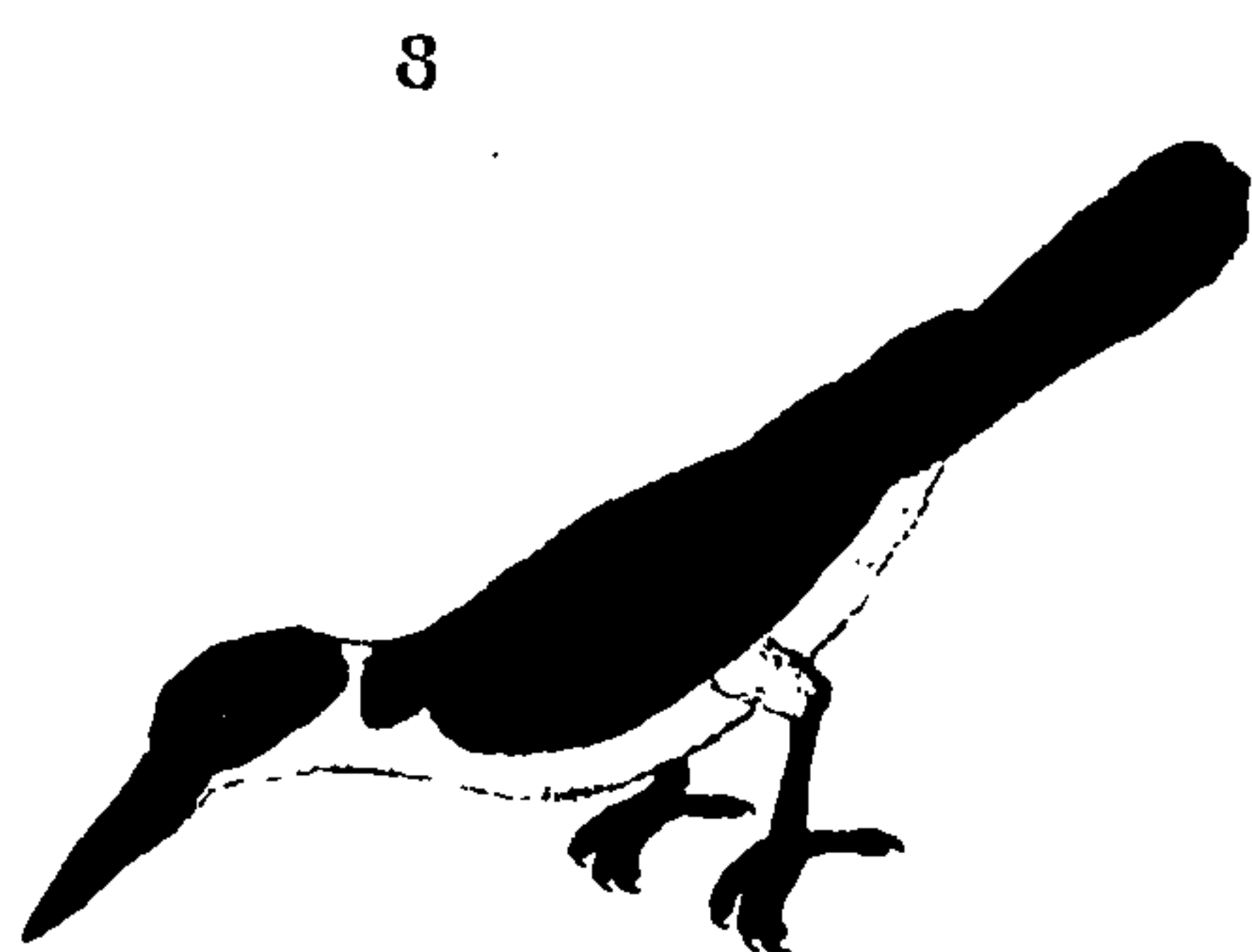
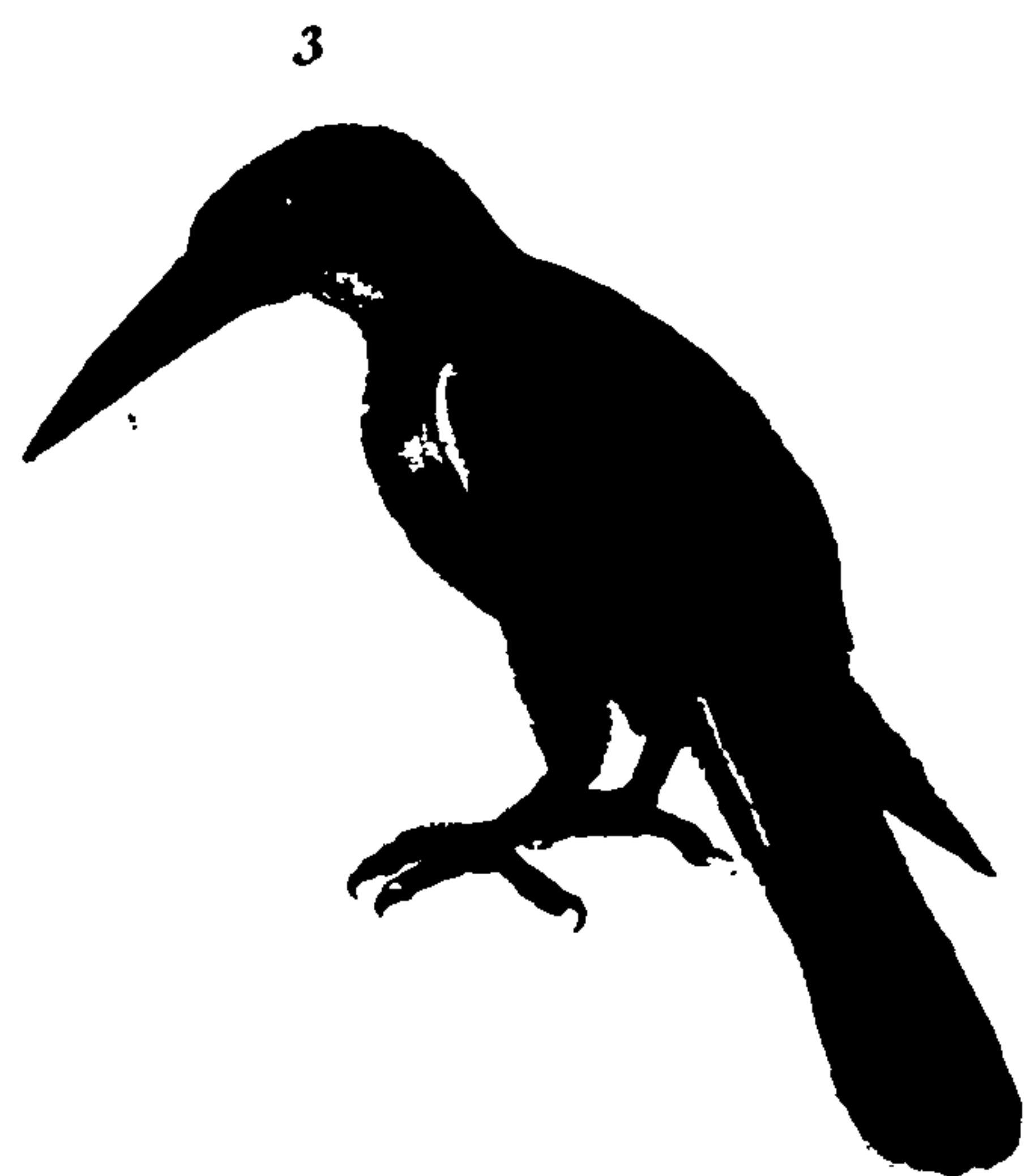
Ridiculous as this description may appear, part of it is founded in truth. With regard to the form of the nest, his account agrees exactly with that of Count Zinanni. Nor are the materials of which Aristotle says it is composed entirely of his own invention: the nest of the King-Fisher is always observed to be strewed with the bones and scales of fishes, the fragments of its food; and those who will not admit it to be a bird which frequents the sea, must not confine their ideas to this climate, but consider, that those birds which inhabit sheltered places in the more rigorous latitudes, may endure exposed ones in milder climates. Aristotle's observations were made in the East; and he admits that the Halcyon sometimes ascended rivers; but it is probable that this was in order to breed; for Zinanni informs us, that in Italy it breeds about the month of May, in the banks of streams contiguous to the sea; and, after the first hatch is reared, returns to lay a second time in the same place.

As this bird has been said to build her nest on the sea, that she might not be interrupted in this task; so she has also been said to possess a charm with which she allayed the fury of the waves: and the poets, indulging the powers of imagination, have dressed the story in all the glowing robes of romance; as may be seen in Theocritus among the Greeks, and Ovid and Virgil among the Latins.

Both Aristotle and Pliny inform us, that the Halcyon is most common in the Sicilian seas; that it sits only a few days in the depth of winter; and that, during this interval, the mariner may sail in perfect security. Hence these were called Halcyon days; and, in after-times, the words were used to express any season of felicity.

Nor do the poets and naturalists of antiquity alone abound in fictions relative to this bird: the historians themselves are not exempt from them. Cicero wrote a long poem in praise of the Halcyon, of which only two lines are extant. Even the Emperor Gordian wrote on the same subject; and the fables which the heathens recorded have been adopted by one of the primitive fathers of the Christian church. 'Behold,' says St. Ambrose, 'the little bird which, in the midst of winter, lays her eggs on the sand by the shore. From that moment the winds are hushed; the sea becomes smooth; and the calm continues for fourteen days. This is the time she requires; seven days to hatch, and seven days to foster her young. The Creator has taught these little animals to make their nests in the midst of the most stormy season, only to manifest his kindness, by granting them a lasting calm. The seamen are not ignorant of this blessing; they call this interval of fair weather their Halcyon days; and they are particularly careful to seize the opportunity, as they have no interruption to dread.'

Numberless instances might be adduced of the credulity of mankind with respect to this bird. But the



1. BLACK AND WHITE KING - FISHER. 2. CRESTED KING - FISHER. 3. GREAT KING - FISHER OF GAMBIA. 4. KING - FISHER OF LUCAS. 5. LITTLE GREEN AND ORANGE - COLOURED KING - FISHER. 6. SPOTTED KING FISHER. 7. SURINAM KING - FISHER. 8. WHITE - COLLARED KING - FISHER.

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the King-Fisher, with which we are now acquainted, possesses none of those powers of allaying the storm, or of building on the waves: it is contented to build its nest on the banks of rivers, and in such situations as are most unlikely to be affected by the rise of the stream. When it has fixed on a proper spot, it digs with its bill a hole about a yard deep: and sometimes it occupies the deserted hole of a rat, or one caused by the decay of the root of an old tree; enlarges it towards the bottom; lines it with the down of the willow; and, without any additional preparation, deposits its eggs.

In reality, the nest of the King-Fisher, in modern times, (and birds in a state of nature never change their instincts) is very different from that described by the ancients, as shaped like a long-necked gourd, and composed of the bones of the sea-needle. Plenty of bones and scales, indeed, are always found in it; but these are only the remains of the bird's food, and not brought there either for the purposes of warmth or convenience. The King-Fisher, as Bellonius observes, feeds on fish, but cannot digest their bones or scales; and therefore throws them up again, as eagles and owls are observed to do a part of their prey.

In one of these deep and gloomy holes there are frequently found from five to nine eggs; and if the nest be robbed, the bird returns, and lays in the same situation. 'I have had,' says Reaumur, 'one of these females brought me, taken from her nest about three leagues from my house. After admiring the beauty of her colours, I permitted her to fly; when the fond creature was instantly seen to repair to the nest where she had just before been made a captive: there joining the male, she again began to lay, though it was for the third time, and the season was very far advanced. At each time she had seven eggs. The older the nest is, the greater quantity of fish-bones and scales does it contain: these are disposed without any order, and sometimes occupy a considerable share of room.'

In our climate the King-Fisher begins to lay early in the season, and excludes her first brood about the beginning of April. The fidelity of the male exceeds that of the turtle: he brings the female large supplies of fish during the season of incubation; and she, contrary to most other birds, is always plump and fat at that time. The male, who on other occasions always makes a twittering noise, now enters the nest with all the silence and circumspection imaginable. The young are hatched at the expiration of twenty days; but they do not acquire the beauty of their plumage till after the first molting season.

The flesh of the King-Fisher is utterly unfit for food; but its beautiful plumage preserves its lustre longer than that of any other bird with which we are acquainted.

KING-FISHER, AMERICAN. This bird, as to its general shape, resembles the European King-Fisher, as well in its bill as feet; but its tail is much longer in proportion. The bill is strong and blackish, except towards the base, where it is of a reddish flesh-colour. The head is of a lead-colour, inclining to blue; and on its top there is a kind of crest of long loose feathers. On each side of the head there are two white spots; and the throat and under-side of the neck are white. The breast is lead-coloured. Six or seven of the prime quills are blackish, with small white spots on the outer webs, which form collectively transverse lines of white: the rest of the quills have white tips; and the inner covert-feathers of the wings are white,

K I N

with a small admixture of orange. The tail is of a pale lead-colour, tipped and transversely marked with narrow bars of white. The belly, the thighs, and the covert-feathers under the tail, are white; the legs and feet are of a reddish brown hue; and the claws are dusky.

KING-FISHER, LITTLE GREEN AND ORANGE-COLOURED. The length of this bird is about five inches and a half from the tip of the bill to the end of the tail. The bill is dusky, except that the lower chap is reddish towards the base. The throat is orange-coloured; and a mark of the same colour runs on each side from the base of the bill over the eyes. The head, the hinder part of the neck, the back, the tail, and the covert-feathers of the wings, are a fine green; a bar of the same colour crosses the breast; but the sides of the belly are of a bright reddish orange-colour. The lower part of the belly, the thighs, and the covert-feathers under the tail, are white; the tail is composed of twelve plumes, the two middle ones being somewhat longer than the rest; and the inner webs are all spotted with white. The inner coverts and the ridges of the wings are a light orange; and the quills are dusky, spotted with a light clay-colour on the outer and inner webs, excepting a few of the outer quills. The legs and feet are small; and the toes, which are flesh-coloured, are connected like those of the other King-Fisher species.

KING-FISHER OF CATESBY. This bird is about the size of the thrush, and the largest of all those which have short tails. The head is big in proportion; and thick of feathers, which form an irregular blue tuft. A white line appears under the eyes, and a spot of the same colour on the forehead. The breast is white, variegated with streaks of red and blue; the quill-feathers of the wings are black, tipped with white; the lower part of the belly is white; the tail is blue; and there are three toes before, and one behind.

KING-FISHER, GREAT, OF GAMBIA. This species is as large as the greater thrush. The bill is long and straight, ending in a sharp point, and of a bright scarlet colour; the upper mandible is channelled on each side; and the angles or corners of the mouth, which are deep cut, fall directly under the eyes. The head, the neck, the whole under-side, and part of the back, are covered with dirty orange-coloured feathers; the chin and breast are lighter than the back; the wings are purple in the upper part; the greater quills are blue, except some of the foremost, which are black; and the ridges of the wings are white. The lower part of the rump and back is a beautiful varying blue green, the wing-feathers bordering on the back partaking of the same colour; the tail is a fine blue with a greenish tinge; the legs and feet are red; and the claws are black.

KING-FISHER, BLACK AND WHITE. The bill of this bird is of a black colour, long, pretty thick at the base, and ends in a sharp point. The crown of the head and the hinder part of the neck are black; a broad line passes from the angles of the mouth under the eyes, which blends with a similar colour behind the neck; and from the nostrils are drawn white lines above the eyes, and continued the whole length of the head. The whole under-side, from the bill to the tail, is of a dirty yellowish white colour, except a narrow bar of black spots that crosses the middle of the breast. The whole back is black, tipped with grey; the ridge of the wing is white; the covert-feathers are partly black and partly white; the bastard-wing is black; the tail-

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feathers are white towards their bottoms, with a row of transverse black spots; towards the tip there is a broad bar of black; and beyond it the tips are white. This bird was first described by Edwards; and, according to him, is a native of Persia.

KING-FISHER, SURINAM. This species has a long, straight, black bill, with channels in the upper mandible. The head is of a dirty brown colour, brighter towards the bill, and darker in the hinder part; under the bill there is a pretty large white spot of an irregular figure; the whole body is of a dirty black hue with a blueish gloss; the wings are of a fine dark shining green colour, a single white feather appearing among the coverts; the upper side of the tail is a dark glossy green, the under being dusky; the two centre feathers are of an enormous length; and the legs and feet are black. This bird, which is a native of Surinam, is distinguished by Linnæus under the name of *Alcedo Paradisea*.

KING-FISHER, SPOTTED. The bill of this bird is dusky; a broad line runs from the bill on each side of the head; and above and beneath the eyes there are narrow lines of orange. The throat, breast, belly, thighs, coverts beneath the tail, and inner coverts of the wings, are of a fine orange-colour; between the back and neck passes a broad list or collar of black feathers, edged with white; the crown of the head is black, but gradually becomes green on the hinder part of the neck; the sides of the head are green; and the back, rump, upper sides of the wings, and tail, are also of a fine glossy dark green hue, variegated with white spots. The quills within-side, and the under-side of the tail, are of a dark ash-colour, with whitish spots on their webs; the tips of the quills without are dusky an inch deep; and the legs and feet are of a reddish flesh-colour. This species is a native of Surinam.

KING-FISHER, CRESTED. The bill of this bird is of the common shape and colour; a line of orange passes under the eyes; the throat under the bill is white; and the crown of the head is covered with long blue green feathers, variegated with black lines, forming an elegant loose crest. The feathers immediately above the eyes are blue; the hinder part of the neck, the back, rump, wings, and tail, are of a beautiful ultramarine blue colour; the tips of the quills are dusky; the inner covert-feathers of the wings are orange-coloured; the under-side of the tail is dusky; the breast, belly, thighs, and covert-feathers under the tail, are a bright orange; and the legs and feet are red. This bird, which is a native of the East Indies, was first described by Edwards.

KING-FISHER OF BENGAL. This bird is somewhat smaller than the thrush. The bill is about three inches long, of a fine scarlet colour, thick at the base, and sharp at the end; the irides are a fine yellow; the head, the upper part of the neck, and the back, are brown; and the breast, throat, and part of the belly, are white, having five large brown spots on each wing. The lower part of the back, the wings, and the tail, are of a fine blueish green colour, except the coverts of the wings, which are brown; and the legs and toes are orange-coloured, and very short.

KING-FISHER, SMALL, OF BENGAL. This species, which is about the size of the common King-Fisher, has a fine scarlet bill, pretty thick at the base. On the forehead there is a yellow spot, and another under the throat. A broad black line runs from the bill quite round the eyes. The head

K I T

is adorned with a tuft of a dull red colour; and beneath it there is a dark blue line, separated from the back by a broad white stripe. The back and wings are a dark blue; the upper part of the tail is red; the belly, thighs, and lower part of the tail, are a beautiful yellow; and the legs and feet are reddish.

KING-FISHER OF LUÇON. This bird is about the size of the blackbird: the top of the head, and part of the neck, are brown; and this colour likewise encircles the eyes, but above them there is a short white line extending to the bill. The lesser coverts of the wings are of the same colour with the head and neck; the primaries are blue and black in their middles, tipped with the latter; the upper part, and the middle of the back, are brownish; the rump and coverts of the tail are a bright sky blue; and the tail itself is a deep blue. The fore-part of the neck, the breast, and the belly, are white, with a longitudinal brown mark in the middle of each feather; and between the neck and the back there is a collar of similar colours. This species was first described by Sonnerat.

KING-FISHER, WHITE-COLLARED, PHILIPPINE. This curious species, originally described by Sonnerat in his Voyage to New Guinea, is somewhat less than the thrush: the head, neck, wings, tail, and back, are blue shaded with green; the throat, breast, belly, and under-coverts of the tail, are white; and a circle of the same colour surrounds the neck. The feet, and the upper mandible, are of a pale black hue; and the lower mandible has a yellowish base.

KITE; the *Falco Milvus* of Linnaeus. A well-known bird of the hawk kind, which may be distinguished from all the rest of this tribe by his forked tail, as well as by his slow floating motion, being almost perpetually on the wing. He appears to repose on the bosom of the air, without making the least effort to support himself. Plooy apprehends that the invention of the rudder originated from observations made of the various motions of the tail of the Kite when steering through the air: certain, however, it is, that the most useful arts were originally copied from animals, though mankind may have improved on them.

The Kite subsists principally on accidental carnage, as almost every bird is able to cleave to him. He may therefore be considered a malicious thief, who only prowls about; and, when he perceives a small bird wounded, or a young chicken that has strayed too far from its parent, will avail himself of the hour of calamity, and, like a famished glutton, destroys the victim without mercy.

The Kite usually breeds in large forests, or woody mountainous countries; and lays two, and sometimes three, white eggs, marked with dirty yellow spots; which, like those of other predaceous birds, are very round and blunt at their blunter ends.

Lord Bacon remarks, that when the Kite flies high, fine and dry weather may be expected. It has been reckoned a bird of passage by some authors; but it is now universally known to continue in England throughout the year. Its length is twenty-seven inches; the expansion of its wings is about five feet; and its weight is forty-four ounces. The bill is two inches long, and very much hooked at the extremity; the skin at the base of the bill is yellow, the head and chin are of a light grey colour, though sometimes white marked with oblong streaks of black; the neck

K N O

and breast are of a tawny red hue, but the middles of the feathers are black. The spots are less numerous on the belly and thighs, and under the tail they almost disappear. The back is brown; the first five quill-feathers are black; and on the inner webs of the remainder there are large blotches of white. The coverts of the wings are varied with tawny black and white; and the tail is of a tawny red hue, the outer feathers on each side being darker than the rest. The thighs are covered with very long feathers; and the legs are yellow and strong. However, these birds differ in their colours, some having been observed entirely of a tawny hue.

The Kite is said to be of essential service in medicine. Its ashes, taken inwardly, are esteemed effectual in the gout and epilepsy: the same is said of the head and liver, when burnt; and the latter is also an ingredient in ophthalmic medicines. - The blood, mixed with nettles, and applied, is said to give relief in the gout; the gall enters the composition of collyria for the eyes; and the fat is used in anointing podagrical patients.

KITE, BRAZILIAN. This species, which is also called Caracara, and by the Portuguese Gavion, is about the size of the common Kite: its tail is nine inches long; its head resembles that of the hawk; its bill is black and hooked; its plumage is tawny, with white and yellow specks; and its feet are yellow, with semicircular, long, sharp, black talons.

KITTIWAKE; the *Larus Rissa* of Linnæus. A bird of the gull kind, which inhabits the romantic cliffs of Flamborough Head, the Bass Isle, Prießholm Isle, the rocks near Slains in Aberdeenshire, and Northfield in the county of Bamff. The head, neck, belly, and tail, are of a snowy whiteness; behind each ear a dusky spot sometimes appears; the back and wings are grey; the bill is yellow tinged with green; and the legs, which are dusky, are furnished with a small knob instead of the hind toe.

KLIP-FISH. A name supposed by some authors to mean the *lupus piscis*, or wolf-fish; and, by others, the common cod-fish. Fabricius is of the former opinion, and Schonefeldt of the latter.

Klip-Fish is also a name by which the Dutch in the East Indies call a flat fish frequently caught on the shores, somewhat resembling the bream. It is generally about six or seven inches in length, and of a very white and silvery hue: the nerves of the dorsal fin are prickly, as in the perch; the tail is pointed; and the irides are of a beautiful yellow colour. The flesh is extremely admired for its delicacy and flavour.

KNOT, the *Tringa Canutus* of Linnæus. An English bird of the snipe kind, said to have obtained its name from Canute, one of the Danish kings of this island, who is reported to have been extremely fond of its flesh.

This bird is seldom more than four ounces and a half in weight; the head and back are of a greyish brown colour; the rump is variegated with black and grey; the breast and belly are white; and the sides are brownish. In some varieties, a white streak runs on each side of the head from the angle of the beak to the eyes. The long feathers of the wings are black and white; the tail, which is about two inches long, is tipped with white; the beak is black, and nearly an inch long; the eyes are large; and the legs are green.

These birds are taken in great numbers, on the

K R A

coasts of Lincolnshire, with a particular kind of net, which will sometimes enclose fourteen dozen at once. Their season is from the beginning of August to that of November. They always disappear at the commencement of the first frosty weather.

KOB. An appellation given by Buffon to his sixth variety of the garelle tribe.

KOBA. A name given by Buffon to his fifth variety of the garelle tribe.

KOHLMULEN. An appellation given by some naturalists to the *asellus flavescens*, or yellow cod; called also the blank and gelbe.

KOKOB. A West Indian species of serpent, the bite of which is extremely fatal. It is of a brown colour, variegated with green and red spots; and is somewhat less than the common viper.

KOMMANICK. A German appellation for the large-crested lark, common in many parts of that country, but wholly unknown in the British isles. It is about the size of the common lark, but its beak is much thicker and longer: the back has more grey, and fewer spots, than the common lark; the rump is almost of one uniform grey colour; and the crest is composed of ten or twelve dark-coloured plumes, which the bird can raise, depress, or expand, at pleasure. This songster seldom soars very high in the air; and generally frequents the banks of rivers.

KORACHERYNCHUS INDICUS. An oriental fish, called by the Dutch Raevenbeck. It receives its name from the similarity of its snout to the beak of the crow. It seldom exceeds seven inches in length: its back and tail are red; its belly is yellow; and it has also on each side two pale yellow lines, which run from the gills to the tail. The flesh is wholesome and well-tasted.

KORETTE, SEA. An East Indian fish, about six or seven inches in length, with large yellow eyes, and a bifid yellowish tail. The fins are yellow; the belly inclines to green; and under it and the tail there are several fins. The flesh is esteemed delicate and nutritive.

KRAKEN. A marine animal of the most enormous dimensions; the credit of whose existence depends on the evidence of Pontoppidon, bishop of Bergen, in his *Natural History of Norway*: and though it would be ungenerous to deny its reality, the relation certainly stands in need of farther confirmation.

As no person has ever pretended to have seen a full-grown Kraken in all its dimensions, a particular account of its conformation cannot be expected: nevertheless, we shall adduce the arguments of our author, on which he grounds his own belief of the existence of this monstrous production of nature; and leave every one to judge for himself of their probability and authenticity.

‘Our fishermen,’ says Pontoppidon, ‘unanimously and invariably affirm, that when they are several miles from the land, particularly in hot summer weather, and by their distance, and the bearings of some points of land, expect from eighty to an hundred fathoms in depth, and do not find more than twenty or thirty; and more especially, if they discover an unusual quantity of cod and ling, they judge that the Kraken is at the bottom: but if they find by their lines that the water in the same place still shallows on them, they know that it is rising to the surface, and row off with the greatest expedition till they come into the usual soundings of the place, there lying a few minutes, on their oars, they see the monster emerge, and display

K R A

play itself sufficiently, though its whole body is not apparent. Its back, or upper surface, which seems an English mile and a half in circumference, (some have affirmed more) looks at first like a number of small islands, surrounded with something that floats like sea-weeds; at last several bright points or antennæ appear, which grow thicker the higher they emerge, and sometimes stand as high and large as the masts of middle-sized vessels. In a short time, it gradually sinks, which is thought as dangerous as its rising, causing such a swell and vortex, that it draws in vessels, like that of Malestram.'

The bishop laments the omission of the only opportunity which ever has been, or perhaps ever may be presented, of examining this creature when alive, or seeing it entire when dead: this, he acquaints us, did once occur, on the credit of the minister of Nordland, and vicar of the College for promoting Christian knowledge; who informed him, that a Kraken came into the shallows between the rocks and cliffs near AbstaHong; where, in turning about, some of its long horns caught hold of the adjoining trees, which it might have easily torn up, had it not been entangled in some clefts of the rock, whence it could not extricate itself, but putrified on the spot.

Pontoppidon mentions no account he has ever received of this monster proving fatal to any person; but relates a report of the danger of two fishermen, who arrived at a part of the water covered with a quantity of the creature's thick slimy excrements: they immediately strove to row off, but were not quick enough in turning to save the boat from one of the Kraken's horns, which so crushed its prow, that it was with difficulty they saved their lives on the wreck, though the weather was perfectly calm. The excrements of this animal are said to be attractive of other fish, on which it feeds. This expedient was probably necessary to its subsistence, on account of its slow unwieldy motion; as this slow motion again may be necessary to the security of a ship, which would certainly be overwhelmed on encountering such an immense animal, if its velocity was equal to its weight.

In confirmation of the reality of this monster, our learned author cites the description of Faroe by Debes, for the existence of certain islands, which suddenly appear, and as suddenly vanish. Many sea-faring people, he adds, give accounts of such, particularly in the North Seas; which their superstition has either ascribed to the delusion of the devil, or considered as inhabited by evil spirits. However, Pontoppidon supposes such mistaken islands to be nothing else but the Kraken; in which opinion he is greatly confirmed by the subsequent quotation from Dr. Hierne, a learned Swede, and which is certainly a very remarkable passage. 'Among the rocks about Stockholm,' says he, 'there is sometimes seen a tract of land, which at other times disappears, and is seen again in another place. Buræus has placed it as an island in his map. The peasants, who call it gummar's ore, say, that it is not always visible, and that it lies out in the open sea, but it never fell under my inspection. One Sunday, when I was out among the rocks, sounding the coasts, it happened that, in one

K U T

place, I saw something like three points of land in the sea, which surprized me a little, as I thought I had inadvertently passed them over before. On this I called to a peasant to enquire for gummar's ore; but when he came, we could see nothing of it: on which the peasant said all was well, and that this prognosticated a storm, or a quantity of fish.' To this our author subjoins, 'Who cannot discover that this gummar's ore, with its points, and prognostications of fishes, was the Kraken, mistaken for an island by Buræus!'

The bishop takes the Kraken, probably from its numerous tentacula, which serve it as feet, to be of the polype kind; and the contemplation of its enormous bulk led him to apply some passages in the sacred writings as descriptive of it.

After paying a just tribute of respect to the moral character and philosophical abilities of our author, we must admit the possibility of this creature's existence, as it implies no contradiction; though it seems to oppose a general prepossession of the whale's being the largest animal in nature. But, were we to suppose a salmon or a sturgeon the largest fish any number of persons had ever seen or heard of, and that the whale had discovered himself as seldom, and but in part, like the Kraken; then it will be easily conceived, that the existence of the whale had been as unwillingly credited as that of the Kraken is now. Some, indeed, may suppose, that such an extensive monster would encroach on the symmetry of nature, and be over proportionate to the size of the globe itself; as a little retrospection will inform us, that the breadth of what is seen of it, supposing it nearly round, must be full two thousand six hundred feet; and its thickness, which may be called its altitude, at least three hundred. Nevertheless, we apprehend that these immense dimensions will not argue conclusively against the existence of the animal, though considerably against a numerous increase or propagation of it. In fact, the great scarcity of the Kraken, its confinement to the North Sea, and perhaps to similar latitudes in the south; the small number propagated by the whale, which is viviparous; and by the largest land-animals, of which the elephant is said to go two years with young; all incline us to conclude, from the analogy of nature, that this monster is by no means numerous.

KUTZE GEHEF. A very beautiful mew, (so called by Marten) which receives its name from its cry. The bill is somewhat bent; and on its under part there is a small protuberance, or knob. The eyes are black, each being surrounded with a red circle; the tail is long and expanded like a fan; the legs are black and short; the belly is of a snowy whiteness; and the wings and back are grey, except that the tips of the former are black.

This bird, which is about the size of the common mew, is caught with a hook baited with whale-fat, of which kind of food it is very fond. It is hunted by the arctic gull, that never desists pursuing it till it drops its excrements, which that bird devours. It is generally extremely lean; and even the little flesh it contains is wholly confined to its legs and breast.